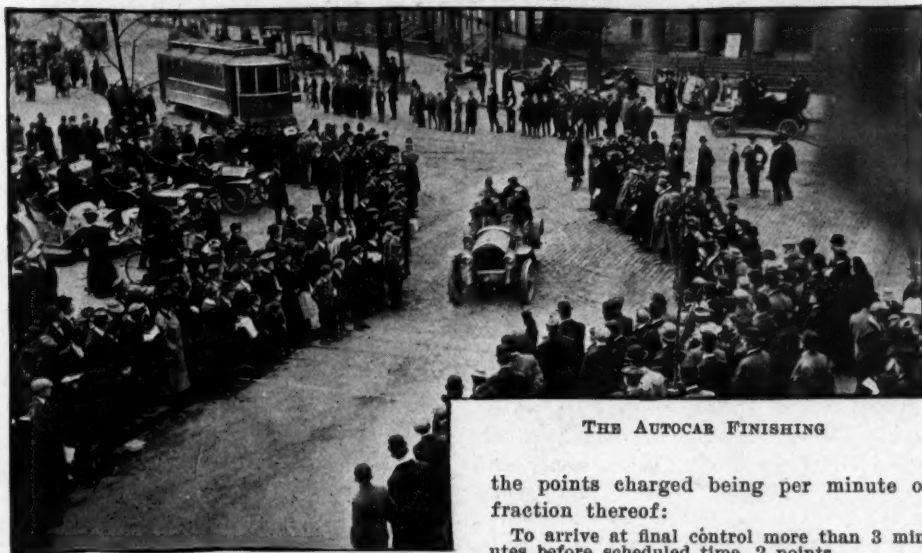


MOTOR AGE

SEVEN PERFECT IN 24-HOUR ROAD TEST



SCENE AT THE FINAL CONTROL

NEWARK, N. J., Nov. 16—In the 24-hour endurance run, which ended here this afternoon, the New Jersey Automobile and Motor Club, of this city, brought to a most successful conclusion by far the longest and fastest 1-day road test yet promoted in the United States.

The twenty-two contesting cars were asked to go 472 miles in a day. This demanded an average rate of speed of 19½ miles an hour. Fourteen of the contenders proved equal to the task. Of the fourteen survivors on schedule time the following evolved with perfect scores from a run bristling with penalization pitfalls. The perfect-score finishers, each of whom won a silver cup, were:

| Driver | Car | H. P. | Type |
|-----------------------|------------|-------|-------|
| J. B. Ryall..... | Matheson | 50 | T. C. |
| R. G. Kelsey..... | Haynes | 50 | R. |
| Ralph Owen..... | Oldsmobile | 30 | T. C. |
| R. A. Greene..... | Locomobile | 40 | T. C. |
| A. T. Purcell..... | Ford | 40 | R. |
| S. D. Atkinson..... | Franklin | 28 | T. C. |
| Montague Roberts..... | Thomas | 60 | T. C. |

The seven who proved equal to the strenuous time schedule appear in the annexed table of results, along with eight others which completed a part of the long run.

The exacting rules of penalization under which the contest was run were well qualified to set a new standard for 1-day endurance competitions. They were as follows,

THE AUTOCAR FINISHING

the points charged being per minute or fraction thereof:

To arrive at final control more than 3 minutes before scheduled time, 2 points.

To arrive at final control more than 3 minutes after scheduled time, 2 points.

To stop motor between controls without making repairs or adjustments, 3 points.

To stop car on last circuit without making repairs or adjustments, 3 points.

To stop motor for the purpose of making adjustments, repairs or replacements, 4 points.

To repair car or make replacements with motor running, 2 points.

To have one or more persons render assistance in any, the time of such person or persons will be charged at double the rate as, in addition to, that charged against the driver.

To drive car in a circle in order to delay passing final control, 2 points will be charged.

No penalty will be noted against puncture of tires, but if puncture occurs and the car does not arrive at the final control within the prescribed time, points will be scored against the car as above, for each minute late.

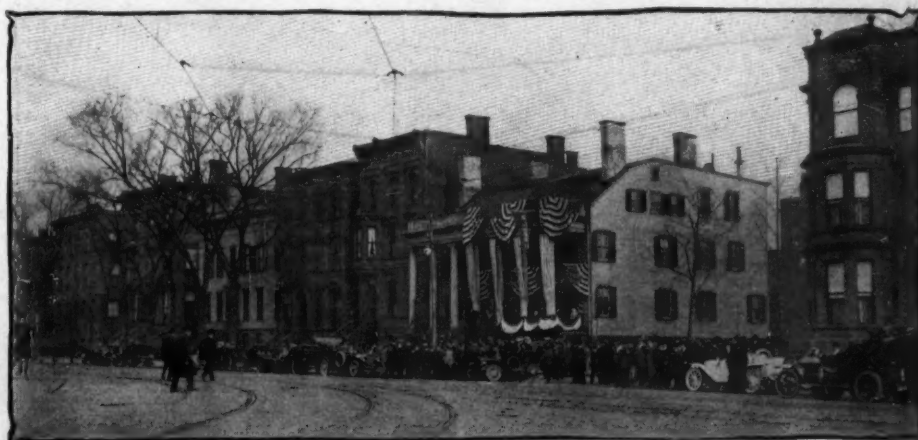
No record will be kept of the amount of oil or gasoline used, but the same must be placed into the tanks under the supervision of the official observers.

As cars will not be allowed to stop on the last circuit under any circumstances, no oil or gasoline shall be put into the tanks after leaving the clubhouse on the last stretch, without being penalized for stopping the car, unless the same is done without stopping the car, or engine, and without the driver receiving any assistance.

The day's run of 472 miles was divided into five laps of 94.4 miles each. The course embraced the hills and country roads of Essex and Morris counties and the more level stretches of macadam lying between Somerville and Springfield favored by the steeply rolling turnpike from Springfield to Irvington, over which the famous bicycle races of olden time were and for that matter still are run.

The start of the run was at the N. J. A. and M. C.'s house at Second and Chestnut streets. Montclair was reached by way of Central avenue and Orange. The first poser to be encountered was the ½-mile hill up Montclair mountain to Caldwell. Beyond Parsippany the cars had to tackle Fox hill, a worse climb even than the Montclair mountain. Another bad hill was met beyond Dover, yeleft Mine hill. The worst running was the 5-mile stretch of abominable country road between Kenville and Succasunna, which was so narrow that there was not room for one car to pass another. Before Morristown was reached Mt. Freedom had to be climbed. From the Morris county metropolis to Somerville by way of Bernardsville the going was good, as it was the rest of the way to Newark.

The weather was clear, cool and fine. At night there was a full moon, which, how-



HEADQUARTERS OF NEW JERSEY AUTOMOBILE AND MOTOR CLUB



CARS LINED UP AT THE FINISH



FINISH OF ROBERTS IN THE THOMAS FLYER

ever, toward morning was obscured by fog. During the ante-daylight hours the drivers complained of intense cold from the wind, caused by the brisk running required.

The results of the run from a comparative standpoint were noteworthy. No single day's endurance test for stock cars on the road in this country has yet exceeded 200 miles. The Chicago Motor Club has set this limit to each of its coming 3 days' runs. The New York Motor Club named this figure for its much-heralded and much-quoted day's run to Albany last spring. The longest day's run scheduled on the last A. A. tour was very much under 200 miles, and on no day was any such pace demanded as the 19% miles per hour set by the Newark club's schedule.

In a word, the run which ended today called for far over double the distance of any of the tests noted above. In view of this the ability of fourteen of the twenty-two starters to maintain a schedule more than double previous 1-day standards, and the fact that seven of these pulled through without penalization under rules whose strenuousness it would be hard to imagine could be increased, certainly give the Jersey men a right to point with pride to their endurance run as a record road

test so far as its requirements and its results are concerned.

Few cars, if any, have ever been run 472 miles in 1 day in this country outside of 24-hour track contests, the Vanderbilt cup race, and not more, in all probability, than a half a dozen intercity runs. It looks as though the top notch has been reached for 1-day road endurance tests if the scheduled speed be kept beneath the legal 20 miles an hour limit. It must not be forgotten, either, that each car was compelled to carry its full complement of passengers as advertised.

A big crowd witnessed the start from the clubhouse, which was decked with flags and the national colors in honor of the event. The first car, a Matheson, piloted by J. B. Ryall, was first sent away at 2 o'clock, the others following in the order of their numbers at one-minute intervals. The other two of the initial trio of starters were well-known pilots—R. G. Kelsey, of New York-Chicago fame, in a Haynes, and Ralph Owen, who piloted the Oldsmobile Pathfinder last winter from New York to Ormond. Montague Roberts, who once held the 24-hour track record, brought up the rear in a Thomas Flyer.

Maxwell No. 5 got away late owing to

its carburetor flooding. This trouble, by the way, put it out of the running in the first round. Maxwell No. 6 also quit during the first lap owing to a loose joint in its differential. Near the end of this lap Mitchell No. 14 broke a pump from overheating.



GROUP OF THE OFFICIALS

P. F. Gillette's car furnished some sensational headlines for the morning papers by catching fire in taking on gasoline from the supply wagon at the end of the first lap. His Pullman was badly damaged thereby and, of course, it was put out of the running completely.

While running at night during the third lap Marmon No. 9 encountered a hay wagon and in turning out to avoid it plunged into the marsh near Mt. Freedom and was hopelessly ditched. In this round the Hewitt ran out of gasoline and broke a screen.

In the fourth round Marmon No. 7 had to withdraw on account of a leaky radiator.

The pluckiest piece of persistency shown by any of the drivers must be credited to I. M. Appereu, the driver of the little single Cadillac, No. 21. In taking a turn too sharply he broke a front wheel. The accident occurred near Somerville. Begging a ride from the next car to come along, he rode back to Newark, got a new wheel, drove back 50 miles, replaced it and continued in the run. Best of all, he made up the 4 hours he had lost and fin-



PRESS CAR OVERTAKES AN UNFORTUNATE CONTESTANT

ished the circuit in schedule time.

Maxwell No. 7 was troubled with a leaky radiator on the last lap.

Marmon No. 8 owing to a leaky pit-cock, ran out of gasoline.

P. H. Johnson's loss of 107 points for his Grant was largely due to a broken chain.

Oldsmobile No. 4 lost its 12 points on the first round through trouble with its clutch.

The loss of 115 points by Mitchell No. 13 was due in part to trouble with the coil.

Cadillac No. 20 had its perfect score ruined by running into a tree and stalling its engine, resulting in a penalization of 3 points.

The farmers and people generally along the route made a holiday of it and turned out en masse to greet the motorists. There were especially large crowds gathered at Kenville and Dover.

It was not a universal case of glad greeting, however, as word came to the clubhouse from Danville that men had



ROUTE FOLLOWED IN THE CONTEST

started to throw logs in the road. An official car hustled out there and put a stop to the outrage.

At Belleville boys threw stones at the cars. George Robertson, who was riding in the Matheson with Ryall, was struck by a shot from a slungshot, which broke his goggles.

Near Dover some village cutups put up



WINTON CAR WHICH WAS USED BY THE PRESS

scarecrows along the road at intervals of a hundred yards.

As a rule the hayseed motor catchers were indulgent and sacrificed not a few almighty dollars upon the altar of sport. In Verona, Dunellen and Plainfield, however, the police were on their jobs, and the pilots drove with caution.

The route was marked by confetti and also by arrows. Mischievous boys, however, misplaced some of the latter and several contestants were fooled this way and went astray in consequence.

GEORGIANS PLAN A RACE

Savannah, Ga., Nov. 17—A stock car race here in January is planned. Mayor George W. Tiedeman has given his sanction to the scheme and the preliminary plans are now completed. A 10-mile stretch of excellent road in the outskirts of the city has been selected for the proposed course, and it is probable that it may be increased, if necessary, to 20 miles or more. Over this route it is proposed to hold as early in January as practicable a contest of about 300 miles for stock cars. The course is easily accessible to the city, a trolley car line leading to one end of it, and it is planned to have a large grand stand erected at this part of the course.

Application has been made to the county commissioners for the road for the proposed race, and they have promised to give the use of the highway to the motorists during the race day, at the same time offering to close traffic on all intersecting roads. Application has also been made to the proper authorities for the use of the Georgia militia stationed in Savannah to help police the course should this step be necessary, and there is good reason for believing that this request will be granted. The plans for the race were thoroughly discussed at a meeting in the De Soto hotel last week, at which Mayor Tiedeman, representatives of the trade bodies and members of the automobile club were present. No difficulty will be experienced in financing the scheme, it is claimed, and sufficient money will be subscribed by those interested in the contest to put the roads in the best possible condition, supplying telephonic communication at different points on the route and furnishing visitors and contestants with sufficient garage accommodations. Another meeting will be held within the next few days, and invitations will then be extended to the leading manufacturers and other prominent motorists to visit the course, if possible, and offer any suggestions.

NEW JERSEY AUTOMOBILE AND MOTOR CLUB'S 24-HOUR ENDURANCE RUN, NOVEMBER 17-18

| No. | Car | Type | H. P. | Drivers | 94.4 miles | 188.8 miles | 283.2 miles | 377.6 miles | 472.0 miles | Points Penalized |
|-----|--------------|-------|-------|-------------------|---------------|----------------|----------------|----------------|----------------|---------------------|
| 1 | Matheson | T. C. | 50 | J. B. Ryall | 3:29 | 7:35 | 11:45 | 17:23 | 24:00 | 0 |
| 2 | Haynes | R. | 50 | R. G. Kelsey | 3:31 | 7:45 | 12:19 | 17:14 | 24:00 | 0 |
| 3 | Oldsmobile | T. C. | 40 | Ralph Owen | 4:48 | 9:22 | 13:35 | 17:58 | 24:00 | 0 |
| 10 | Locomobile | T. C. | 40 | R. A. Greene | 4:07 | 8:24 | 11:58 | 17:12 | 23:59 | 0 |
| 16 | Ford | R. | 40 | A. T. Purcell | 3:37 | 7:50 | 13:10 | 17:56 | 23:59 | 0 |
| 19 | Franklin | T. C. | 28 | S. D. Atkinson | 3:39 | 7:38 | 12:13 | 17:51 | 23:58½ | 0 |
| 23 | Thomas Flyer | T. C. | 60 | M. Roberts | 3:48 | 7:59 | 12:24 | 17:56 | 24:00 | 0 |
| 4 | Oldsmobile | T. C. | 40 | J. P. Hopson | 5:42 | 10:04 | 14:37 | 18:51 | 23:59½ | 12 |
| 20 | Cadillac | R. | 25 | J. M. Plank | 4:18 | 9:08 | 13:57 | 18:30 | 24:00 | 3 |
| 22 | Autocar | R. | 30 | C. E. Fisher | 4:20 | 8:40 | 13:15 | 18:21 | 24:00 | 76 |
| 15 | Mitchell | T. C. | 30 | C. W. Smith | 4:20 | 10:14 | 16:17 | Out | Out | |
| 11 | Grout | T. C. | 35 | P. H. Johnston | 4:30 | 9:13 | 13:55 | 17:20 | 24:10 | 107 |
| 12 | Mitchell | R. | 20 | W. Mazocco | 4:04 | 9:45 | 14:34 | 18:39 | 24:00 | 115 |
| 8 | Marmon | T. C. | 40 | Mrs. M. H. Rickey | 4:05 | 8:14 | 15:43 | 19:43 | 24:02 | 341 |
| 21 | Cadillac | R. | 10 | L. M. Uppercu | 3:25 | 7:11 | 15:31 | 23:58 | 1,098 | |
| 7 | Maxwell | R. | 14 | C. Fleming | 3:39 | 9:04 | 12:14 | 18:05 | Out | |
| 9 | Marmon | T. C. | 35 | L. H. Roberts | 3:52 | 8:50 | 18:17 | Out | Out | |
| 17 | Pullman | T. C. | 20 | P. F. Gillett | 4:47 | Out | Out | Out | Out | |
| 18 | Hewitt | R. | 12 | J. Ackerman | 4:47 | 11:49 | Out | Out | Out | |
| 14 | Mitchell | R. | 20 | W. Mazocco | Out | Out | Out | Out | Out | |
| 5 | Maxwell | T. C. | 28 | D. McCormack | Out | Out | Out | Out | Out | |
| 6 | Maxwell | R. | 14 | D. Nichols | Out | Out | Out | Out | Out | |

NEWS OF AMERICAN MOTOR CAR SHOWS



ONE OF THE MARATTA PAINTINGS THAT WILL BE USED IN CHICAGO SHOW DECORATIONS

CHICAGO, Nov. 20—The N. A. A. M. three-ringed show which will be held in the Coliseum and the First and Seventh regiment armories beginning a week from Saturday is coming along nicely and Manager Miles expects to get his force into the buildings early in the week. It is his aim to have everything in readiness for the opening night, a precedent he established several years ago. His main trouble now seems to be to find room for all those seeking space. Unfortunately it has been found impossible, despite the immense amount of space available to take care of all applicants. All the space was allotted in July. There have been some changes and a few withdrawals, so that it has been possible to take care of a few new applicants since that time, but a majority have, perforce, been turned away. At this time there are about fifteen makers of cars and forty makers of accessories on the waiting list, with slim prospects of admission. And all this despite the fact that the commercial cars which formerly occupied a lot of the space, have been transferred to a separate building. The entire gallery of the Coliseum and second floor of the annex, except the motor cycle section, have been taken by members of the Motor and Accessories Manufacturers. The show will open, as usual, at 2 p. m. on Saturday, November 30, and thereafter, Sunday excepted, at 10 a. m. It will close each evening at 10:30 o'clock.

The motor cycle seems to have assumed a position of such importance as to demand considerable attention. It has received it at the Chicago show management. A section in the second floor of the Coliseum annex has been devoted to it and ten manufacturers have taken advantage of the opportunity presented. The list includes all the leading makers of the country. This is not, as a matter of fact, the first year attention has been given to the motor cycle, as has been stated, for they have formed a feature of the Chicago show for 3 years; but it is the first time

they have been given a place by themselves. The plan of decoration and equipment will be even more elaborate than last year. Among other features there will be 142 oil paintings, ranging in size from 4 by 8 to 8 by 24 feet, covering, in all, 8,734 square feet of canvas.

Quaker Show a Success

Philadelphia, Pa., Nov. 18—At 10:30 Saturday night the most successful motor show ever held in this city came to a close. After the week's experience it would be hard to convince any of the exhibitors that there is no virtue in local shows. Actual sales—with the money handed over—were plentiful; indeed, several exhibitors who had had displays also in the garden show averred that as regards individual sales the Quaker City show excelled the big Gotham affair. The paid attendance exceeded by 50 per cent the

previous best—and this despite the injection of the two \$1 nights, Tuesday and Thursday. Prospects, good ones, too, notwithstanding the financial stringency, are reported in larger numbers than ever before. Almost without exception the week was kickless—Manager Beck had few difficulties to adjust and grievances to listen to. Exhibitors apparently had forgotten previous alleged cold deals and double-crosses, and despite the necessarily restricted quarters they had to put up with, all of them without discoverable exception, were so intent on taking care of the business that poured in upon them that they really had no time to hunt for flaws where none exist—the one great fault of a 300 per cent too small show building. Even the sundries exhibitors, who had been relegated en masse to the second floor, had no kick coming.

The dollar night crowds were, if anything, thicker than those of the other five, when only 50 cents was charged. The Philadelphia Automobile Trades Association, which promoted the show, will in consequence be able to declare quite a comfortable dividend. A hurried Saturday afternoon count—making the usual allowance for any overstatement which may have been prompted by o'erbubbling enthusiasm due to the show's pronounced success—elicited the fact that the actual sales during the week in the armory alone totaled a trifle over \$150,000. One exhibitor disposed of seven cars, another six, two five each, quite a number of four, the remainder scattering.

The dozen or more row concerns which either could not get space or refused to accept the limited area offered them by the committee also profited by the show.

Salon Poster of Unique Design

New York, Nov. 18—A singularly effective design, styled "The Spirit of Speed," heralds the importers' show, which will hold forth at Madison Square Garden, December 28 to January 4.



IMPORTERS' SALON POSTER

The poster by Pal, whose full name is Jean Paleologue, has been lithographed by the six-color process. The tones are purple, light green, yellow and dark blue. "The Spirit of Speed" embodied in the slender girlish figure of a beautiful young woman, who wears a very becoming pair of downy wings and a robe of veiling, is shown gliding through the air. Her left arm is upraised, while in the right she holds the palm of victory, as she shows the way for the car of 1908 which looms up behind her, its wheels half hidden by the ethereal mists.

Detroit Space Assigned

Detroit, Mich., Nov. 18.—The drawing for and allotment of space in the show which is to be held under the auspices of the Detroit Automobile Dealers' Association in the big pavilion at Riverview park December 9 to 14 took place at the office of the association Thursday evening. Owing to the large number of applications for space, resort had to be made to a clause in the rules which permitted the cutting down of space applied for, at the discretion of the committee, in order to give everybody an equitable showing. As it was, the commercial vehicles had to be left out in order to take care of the pleasure cars. The committee is now trying to devise plans for an annex in which to show the commercial vehicles, as they are anxious to leave no one out. Lacking space to adequately take care of all the applicants who desire to show motor cars made it necessary to exclude exhibits of accessories. A few of these could have been accommodated, but the committee could not afford to discriminate. Henry Ford has promised to uncover at his home show, for the first time, the new Ford models. Winton will show no fewer than six models, including his six in various styles of body. There will be several Maxwell and Reo models; all the Pope vehicles will be there, and other makers will show from two to five styles of car.

Boston Show in March

Boston, Mass., Nov. 20.—Manager Chester I. Campbell has just made his first announcements regarding the next Boston show. The date selected is March 7 to 14, 1908. This is practically the same time as a year ago. This year it is to be solely a show for motor cars. The motor boats are to have an exhibition of their own at another date and this gives greater space to the motor cars. There now is available in Mechanics' hall just 105,000 square feet. There will be no other hall used this year as in former shows, the entire exhibit being housed under the one roof. The building is divided into six sections. The pleasure cars will be shown on the floor of the main hall and in part of the balcony. The commercial cars will be in the basement. Quite a few of the dealers here are glad the Boston show comes as late as March. They figure out that by that time everything will be going along smoothly and they have no fear of the results.

ORIOLE SHOW NOW ON

Baltimore Cuts in on Circuit with Creditable Display of Motor Cars and Sundries

Baltimore, Md., Nov. 18.—Promptly at 8 o'clock Saturday night the third annual show opened at the large garage at Maryland and Mount Royal avenues. The show this year is being held under the auspices of the Automobile Dealers' Association of Baltimore, with B. R. Johnson as manager. While there was an excellent line of cars on display the opening night, the real opening did not take place until today, when many of the cars were brought down to the Monumental City on special trains from the show at Philadelphia.

The display of Callahan, Atkinson & Co. includes the Locomobile line. The concern has a demonstrator on the curb in front of the show. The crowd is interested in the Hamilton Auto Co.'s exhibit of Stoddard-Dayton cars. The four-cylinder polished chassis is the feature of this display, while the Stoddard-Dayton runabouts share in the popularity. E. L. Leinbach, resident manager of the Hamilton Auto Co., is in charge of the exhibit. The Lambert Automobile Co. has on exhibition 14-horsepower Maxwell runabouts and 24-horsepower touring cars. The 1908 Pullman limousine is exhibited by the Shaffer Mfg. Co. and demonstrated at its garage on North Calvert street. This car attracted attention at the New York and Philadelphia shows and was greatly admired on the opening night of the local show. The Snoddeal Auto Co. has a number of Marmon touring cars on exhibition. The 45-horsepower seven-passenger touring cars, with limousine and landaulet bodies being particularly popular.

French & McCormick, the new local agents for the Oldsmobile, have their space filled with the latest models of this car. They also have one each of models M, X and Z on the streets for demonstrating purposes. J. L. B. Wilhide has models of the 22-horsepower Atlas runabouts and of the 30-35-horsepower Kisselkar. The Mar-Del Co., which operates a large garage in this city, has an elaborate display at its booth of the following makes, for which it has the local agencies: Packard touring car chassis; Franklin 28-horsepower touring car and 16-horsepower touring car chassis; Buick 40-horsepower touring car, 40-horsepower chassis, 24-horsepower touring car, 24-horsepower roadster, 22-horsepower touring car, 20-horsepower runabout and 20-horsepower chassis; Elmore 24-horsepower runabout and 32-horsepower chassis; Waverley electric victrola, phaeton, coupe and working model.

The Peerless car is shown by the Motor Car Co. This company expects to show models of the Thomas Flyer and the Thomas-Detroit and other makes later in the week. Delayed shipments have held these displays back. The exhibit of the

Mount Vernon Motor Car Co. consists of Autocar limousines, touring cars, roadsters, chassis and runabouts. The White steamer also has an interesting exhibit. The Maryland Automobile Motor Car Co., maker of the Maryland, the only car manufactured outright in Baltimore, has a number of its cars in line. The model operated by an electric motor attracted much attention. The Auto Supply and Storage Co. has models of the Lambert, Holsman, Overland, Studebaker and National cars on exhibition in the building.

One of the big features of the present show is the splendid exhibit of accessories. On the platform at the head of the mammoth garage is found a clever exhibit of almost everything in the accessory line. Among them are those of the Phoebus lamps, the display of the Columbia Lubricants Co.'s Monogram oils and the exhibition of Cassidy, Davy & Co., which includes goggles, caps and imported wearing apparel of furs and cloth. Other exhibits in this line are from the Jones Speedometer Co., of New York; Weed Chain Tire Grip Co., of New York; Gray-Hawley Mfg. Co., of Detroit, Mich.; Nathan Novelty Mfg. Co., of New York; Uncas Specialty Co., of Norwich, Conn.; Conover Wind Shield Co., of Paterson, N. J.; Joseph Dixon Crucible Co., of Jersey City; Will Young Appliance Co., of Yonkers, N. Y.; Travers Blowout Patch Co., of New York; Ajax-Grieb Rubber Co., Trenton, N. J.; Rands Mfg. Co., Detroit, Mich.; Stereo Light Gas Tank Co., Jersey City. The exhibit of H. H. Babcock Co. consists of every kind of lap robe and special robes for chauffeurs or the car owner.

Following is a complete list of the local exhibitors at the show: Motor Car Co., Mar-Del Mobile Co., the White garage, Auto Supply and Storage Co., Mount Vernon Motor Car Co., Snoddeal Auto Co., Callahan, Atkinson & Co., Baltimore Motor Carriage Co., Hamilton Auto Co., Cassidy Davy & Co., Maryland Motor Car Co., Sinclair-Scott Co., Carl Spoerer's Sons, Southern Automobile Co., Oldsmobile Co., French & McCormick, Lambert Automobile Co., Ford Auto Co., Reese Motor Car Co., J. L. B. Wilhide, H. H. Babcock, Standard Oil Co., Atlantic Rim Co., Edmund Hans Co. and the National Electrical Supply Co., of Washington, D. C.

Record Shipment of Cars

New York, Nov. 16.—The entire garden exhibit of cars was started for the Chicago show Wednesday in two train loads, each train consisting of thirty freight cars, and each containing from two to four motor cars. This is claimed to be the largest motor car shipment ever made, or, in fact, the largest shipment of any one manufactured product to be transported at one time over one route. The loading and forwarding of this great number of machines was accomplished under arrangements previously made by the traffic department of the licensed association, the entire lot being loaded in 6 hours and without a single case of damage being reported.

RUN IS A MINIATURE GLIDDEN

Chicago Show Reliability Likely to Attract a Field of at Least Forty Starters—Twenty-Eight Nominations Received Up to Wednesday Night by Motor Club

Chicago, Nov. 20—With the entries to the Chicago show reliability run closing tomorrow night, it looks as if there would be between forty and fifty cars take part next week in the 3 days' 600-mile test that is unique in the annals of American motoring. At the present writing there are actually in hand, accompanied by the \$100 fee, the nomination of twenty-eight cars of all types, a bus, big touring cars, roadsters and sixes, a most representative field in which twenty-one different factories are represented. All are of the gasoline type with but one exception—the White, which has three strings to its bow and which is determined to repeat its Glidden tour showing in what is considered to be the greatest reliability run ever attempted in this country.

Of the twenty-eight in hand, nineteen are touring cars varying in capacity from five to seven passengers. There are six three-passenger roadsters, one tourabout and a two-passenger runabout. The string is completed by a Rapid bus which will have to carry twelve passengers 600 miles, a task which its makers are tackling with all kinds of confidence. The roadsters include a Rambler, Autocar, Haynes, White, Matheson and Stoddard-Dayton; the Marion represents the tourabout brigade, while the Reo is the lone runabout in so far. There are three six-cylinders named, but one more is certain.

Probably one-third the cars are of 1907 vintage, most of them veterans with reputations back of them. The Reo is No. 33 of Glidden fame which recently gathered in a gold medal for the non-motor stop run of 500 miles to the Jamestown exposition. A good side partner is the Maxwell No. 13, which reeled off 5,000 miles last summer without the bonnet seals being broken, taking in a 24-hour race, a reliability run and part of the Glidden tour.

There is considerable rivalry to see who will have the largest representation on the run. There are two tied now, the Matheson and White each with three. There are two Stoddards and a pair of Jacksons. In addition to the twenty-eight now in hand there are good prospects of getting entries from the Locomobile, Kisselkar, Stanley, Oldsmobile, Reliable Dayton, Premier, Buick, Corbin, Pierce-Racine, Lozier and another Pierce-Arrow.

Naturally the entry list has been most in the limelight, but nevertheless the contest committee has not neglected any of the thousand and one details of such a contest. The roads have been traversed, signs put up, maps drawn, arrangements made for checking at the various places and it is believed everything will have been attended to by Saturday night. Scouts

have gone over the routes and pronounce them in prime shape for the contest. There will be checking stations at Michigan City and at South Bend the first day—Tuesday—when the run goes to South Bend and back, the longest of the routes. On Wednesday, going to Rockford, the cars will be checked at Elgin going and coming and also at the turning point. There will be a checking station at Aurora on Thursday, when the jaunt will be to Ottawa and return.

The fourth day will be devoted to the examination of the cars by the technical committee, whose members will be the judges in the contest. They will take each car and subject it to a run on the road to determine whether or not the car is in good condition. Unless it is it will be penalized even if it has a perfect score up to that point. These penalties will be imposed as follows:

Front and rear axles—There will be no penalty when the spread of the wheels is less than $\frac{1}{2}$ inch; when spread $\frac{1}{2}$ inch or more the penalty will be 5 points for each $\frac{1}{2}$ inch or fraction thereof.

Springs—A sag of 1 inch is permitted without penalization. For each addition $\frac{1}{4}$ inch or fraction thereof the penalty will be 5 points.

Frame—For each $\frac{1}{4}$ inch or fraction thereof sag or bend the penalty is 15 points.

Steering knuckles—For each $\frac{1}{8}$ -inch variation or fraction thereof, 10 points.

Motor test—One or more cylinders missing in a two-block test, 50 points.

Brakes—Failure to stop car within reasonable bounds, 30 points.

Transmission—Failure to drive on different forward and reverse speeds, 50 points.

Following are the entries, showing the number, make of car, entrant, driver, observer and make of tires:

Royal Tourist, 45 horsepower, seven-passenger; R. W. Cook, R. W. Cook, L. S. Jullien, Diamond.

Pierce-Arrow six, 40 horsepower, seven-passenger; Henry Paulman & Co., Paul Hoffman, Ed Robinson, Goodrich.

Rambler, 32 horsepower, three-passenger; Thomas R. Jeffery & Co., Ted Collier, Ed Dixon, Goodrich.

Pennsylvania, 50 horsepower, five-passenger; Pennsylvania Auto Motor Co., Len Zergie.

Peerless, 30 horsepower, seven-passenger; W. G. Tennant, Charles Burman, Diamond.

Wayne, 30 horsepower, three-passenger; Wayne Automobile Co., Frank Gemel, Joseph D. Porter, Morgan & Wright.

Matheson, 50 horsepower, seven-passenger; Palmer & Singer Mfg. Co., R. G. Kelsey, Diamond.

Matheson, 50 horsepower, seven-passenger; Palmer & Singer Mfg. Co., D. Buck, Diamond.

Matheson, 35 horsepower, three-passenger; Palmer & Singer Mfg. Co., Julius Heineman, Diamond.

Stevens-Duryea six, 50 horsepower, seven-passenger; Louis Geyler, Clinton Clark, Frank Leabenworth, Fisk.

Stoddard-Dayton, 30-35 horsepower, three-passenger; McDuffee Automobile Co., C. A. Englebeck, W. W. McDonald, Goodrich.

Stoddard-Dayton six, 50 horsepower, seven-passenger; McDuffee Automobile Co., Bert Payne, Goodrich tires.

Jackson, 20-24 horsepower, five-passenger; Jackson Automobile Co., E. F. Scheiffer, Robert Johnson, Goodyear detachable.

Jackson, 20-24 horsepower, five-passenger; Jackson Automobile Co., F. L. Holmes, William Deihl, Goodyear detachable.

Maxwell, 20 horsepower, five-passenger; Maxwell-Briscoe-Chase Co., O. W. Klose, W. B. Jameson.

Autocar, 30 horsepower, three-passenger; James Levy Co., Barney Oldfield, Frank Vaughan, Fisk.

Haynes, 30 horsepower, three-passenger; Haynes Automobile Co.; Frank Nutt, J. H. Seagraves, Diamond.

Dragon, 24 horsepower, five-passenger; Dragon Automobile Co., J. W. Haynes, A. L. Kull, Diamond.

Rapid bus, 25 horsepower, twelve-passenger; Rapid Motor Vehicle Co., Frank Grogan, Firestone.

Reo, 18-20 horsepower, two-passenger; Walden W. Shaw Co., M. D. Vandecar, H. F. Musgrave, Michelin.

Frayer-Miller, 50 horsepower, seven-passenger; Oscar Lear Automobile Co., J. Barnes, R. M. Hess, Diamond.

Auburn, 24 horsepower, five-passenger; Auburn Automobile Co., R. E. Parker, Glen Howard, Goodrich.

Marion, 24 horsepower, four-passenger tourabout; Favorite Automobile Co., Charles W. Price and Harry Stutz, W. J. Bowman.

Thomas Flyer, 60 horsepower, seven-passenger; C. A. Coey, C. A. Coey, Louis Jackman, Goodrich.

Studebaker, 30 horsepower, five-passenger; Studebaker Brothers Mfg. Co., no driver named, H. M. Chambers, Diamond.

White steamer, 30 horsepower, five-passenger; White Co., H. K. Sheridan, Alva Edmondson, Diamond.

White steamer, 30 horsepower, three-passenger; White Co., William Leitch, Henry P. Thompson, Goodrich.

White steamer, 20 horsepower, five-passenger; White Co., C. E. Denzer, G. L. Schofield, Diamond.

EXPORTS FALLING OFF

Washington, D. C., Nov. 11—For the first time in many months the exports of motor cars show a slight falling off. During September last, according to figures compiled from official records, 113 cars, valued at \$179,041, and parts to the value of \$32,832, were exported from the United States, as against 177 cars, valued at \$271,295, and parts valued at \$36,464, exported during the same month of last year. During the first 9 months of this year 2,421 cars, valued at \$4,442,478, were shipped abroad, together with parts valued at \$521,407, while during the corresponding period of last year the combined value of the cars and parts exported was only \$3,644,179. These figures are indicative of what American motor car manufacturers are accomplishing in foreign fields. During September last cars and parts were shipped to the following countries: United Kingdom, \$39,321; France, \$4,130; Germany, \$5,338; Italy, \$655; other European countries, \$9,816; British North America, \$50,250; Mexico, \$25,583; West Indies and Bermuda, \$12,589; South America, \$31,514; British East Indies, \$1,748; British Australasia, \$10,004; other Asia and Oceania, \$10,379; Africa, \$1,438; other countries, \$108. Turning to the other side of the picture the figures shown decided losses in the imports of foreign cars. During September last 102 cars, valued at \$253,628, together with parts valued at \$37,594, were imported into the United States, as against 138 cars, valued at \$492,189, and parts valued at \$39,076, imported during September, 1906. During the first 9 months of 1906 the number of cars imported was 922, valued at \$3,116,045, declining to 730 cars, valued at \$2,310,922, during

the same period of this year. The imports of parts increased in value from \$385,785 during the 9 months of 1906, to \$546,801 during the same period of this year. During September last cars were received from the following countries: United Kingdom, six, valued at \$19,879; France, eighty-three, valued at \$189,583; Germany, four, valued at \$17,739; Italy, four, valued at \$12,527; other countries, five, valued at \$13,900.

MOTORIZING IN THE DISTRICT

Washington, D. C., Nov. 14—The annual report of the motor car board of the District of Columbia for the fiscal year which ended June 30, 1907, submitted this week to the district commissioners by Secretary Woodward, shows the board held twenty-four meetings during the year, examining 1,031 applicants and rejecting forty-one applicants as not being competent to operate a car. During the year 990 permits were issued to operate cars; 546 cars were assigned identification numbers; 352 cars to which identification numbers had been assigned were transferred to the purchasers of them. One hundred and twenty-seven cars from different states were also registered during the year. The number and types of vehicles to which identification numbers were assigned during the year were as follows: Electric, 129; gasoline, 351; steam, 23; motor cycle, 43. The type of vehicle to be operated, number examined, permits recommended and issued, were in detail as follows, those not competent being also included in the figures: Electric, 300; gasoline, 571; steam, 87; motor cycle, 32. The report further shows that there have been registered 2,338 motor vehicles of all kinds and permits to operate said vehicles have been issued to 3,353 persons from the date of the first registration and examination August 11, 1903. The board renews the recommendation of its last annual report that a fee of \$1 be paid for a permit to operate a car by others than owners and members of their families, tourists or nonresidents who use their motor vehicles during a transient sojourn only in the District of Columbia. In the opinion of the board the identification numbers carried on motor cars should be restricted to those of the District of Columbia and the states of Maryland and Virginia.

FRISCO SHOW ABANDONED

San Francisco, Cal., Nov. 15—The San Francisco Automobile Dealers' Association has decided to abandon for this season the proposed motor car show. Few of the dealers have been able to secure their cars, and it was felt that an attempt to hold the show at this time would result in a poor and incomplete exhibition. The members were unanimous in the belief that it would be far wiser to abandon the show entirely rather than postpone it to some later time, as there was no certainty when it would be possible to secure enough cars to make a creditable display.

BEST CLIMB BY FIAT

Cedrina's Cyclone Star of Rhode Island Automobile Club's Hill Test at Providence

Providence, R. I., Nov. 16—Although a trifle late in the year for such an event, the Rhode Island Automobile Club today successfully promoted a hill-climb on the hill at the summer home of C. Prescott Knight in Riverpoint, which resulted in sensational time being made by Cedrina in the Fiat Cyclone, who went up the short, sharp incline of $\frac{1}{2}$ mile at the rate of 43 miles an hour. The results of the climb were as follows:

| Class 1, gasoline cars, \$1,000 and under— | | | |
|---|------|-------------|---------|
| Car | H.P. | Driver | Time |
| Ford | 15 | Flint | :49 |
| Ford | 15 | Rust | :56 1-5 |
| Class 2, steam touring cars with tonneau— | | | |
| Stanley | 20 | Baldwin | :36 1-5 |
| Stanley | 20 | Blackington | :40 |
| Class 3, gasoline cars, \$3,000 and under— | | | |
| Pope-Hartford | 30 | Grady | :37 3-5 |
| Ford six | 40 | Myers | :44 4-5 |
| Pennsylvania | | Sweeney | :55 |
| Class 4, gasoline cars, \$2,000 and under— | | | |
| Oldsmobile | 32 | Davis | :49 1-5 |
| Corbin | 24 | Pugh | :51 2-5 |
| Class 5, steam runabouts— | | | |
| Stanley | 20 | Baldwin | :31 3-5 |
| Stanley | 20 | Blackington | :33 |
| Class 6, gasoline cars, \$5,000 and under— | | | |
| Pope-Hartford | 30 | Grady | :37 3-5 |
| Peerless | 30 | Snow | :42 |
| Stevens-Duryea | 35 | Snow | :47 |
| Pennsylvania | | Sweeney | :50 3-5 |
| Class 7, gasoline touring cars, over \$5,000— | | | |
| Peerless | 45 | Snow | :39 |
| Fiat | 60 | Crafford | :45 1-5 |
| Stevens-Duryea | 50 | Congar | :51 |
| Class 8, free-for-all— | | | |
| Fiat | 60 | Cedrina | :30 |
| Stanley | 20 | Blackington | :34 |
| Pope-Hartford | 30 | Grady | :37 |
| Corbin | 30 | Dower | :37 |
| Stanley | 25 | Baldwin | ... |

The C. Prescott Knight trophy was won by Jeff Crafford, although Cedrina drove the car under the former's entry. This car was entered under W. Penn Mather's name, but was changed later and ran under the name of J. K. Crafford.

There were two mishaps in the free-for-all. Leo F. N. Baldwin, in his Stanley racing machine, was the fourth man sent over the line, but on account of the bursting of a steam pipe just before the finish, he was obliged to stop without crossing the line. Baldwin started with about 1,000 pounds of steam, and for a time it looked as if he was going to make a record-breaking run. He turned all the curves perfectly and was half way over the final straightaway when his machine seemed to open and a volume of steam spurted out, completely hiding it from the view of the timers at the finish for a few seconds. It was making its fastest time then. Spectators jumped, all expecting to see some disaster, but Baldwin shut off power at once and steered straight. The car stopped within 50 feet and, then being out of power, started to back down the hill. Those on this side of the road ran to Baldwin's assistance and dragged the car to the side into a field out of danger. Baldwin remained in the seat although enveloped in steam. He was not scalded, he declared afterward.

The other accident occurred to J. Dower, driving Cliff Edwards' Corbin, in event No.

8. On account of the location of the hill it is necessary to turn a slight curve just after crossing the starting line, and in doing so Dower glanced along the stone wall, bounced at an angle, struck again with the rear wheel and then continued along in the climb. He suffered no damage.

The meet was the most spectacular and exciting that has been promoted by the club and all along the course thousands of spectators were stationed to watch the climbs. The stone wall that follows the road on the right going up was packed with men and women, while at the top of the hill about fifty cars with their occupants were placed at vantage points. The contesting cars were sent up so close together that the interest was not allowed to slacken for a moment, and although there were twenty-three entries, the whole schedule was carried through in practically an hour and a quarter. The hill was in good condition, and the worst turn was graded so as to allow for high speed with a minimum of danger. A telephone system arranged between the start and the finish was used for taking the time, as well as for furnishing instructions whenever needed.

The best showing of any stock gasoline car was made by the Pope-Hartford entered by Herbert A. Capron. Driven by Grady a 30-horsepower car won in class No. 3, for cars costing \$3,000 or under. The time in this event was 37 $\frac{3}{5}$ seconds. In the class for cars costing \$5,000 and under a similar car made the ascent in exactly the same time, winning first place. In the free-for-all a Pope-Hartford made the ascent in 37 seconds flat, winning third place behind the Fiat racer and a Stanley steamer.

GLIDDEN'S TOUR PLANS

Boston, Mass., Nov. 18—Charles J. Glidden has just completed his arrangements for a continuation of his tour around the world. He leaves Boston early in January and sails for Europe, where his car is now awaiting him. Last week he received the official permission of the sultan of Turkey to visit Palestine and other portions of the sultan's realm in his motor car. The permit is written in the Turkish language and gives the bearer the right to go where he pleases and directs the officials to see that he is cared for and extended every courtesy. It took a year to get the permission. Mr. Glidden will tour in Egypt until May. Then he will start for France and continue his ballooning lessons until he has acquired a certificate. It is his intention to then take a balloon with him on tours and make an ascension in every country on the globe. He made one with Leo Stevens a few days ago in New England and had Mr. Stevens as his guest in Boston for some days. Mrs. Glidden will accompany her husband on the tours and they will return in time for the A. A. A. tour next July. Mr. Glidden thinks New England and the middle west should have the tour next year, but knows nothing of what the A. A. A. has in mind.

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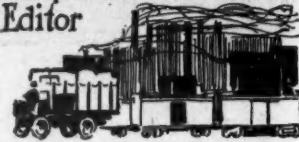


MOTOR AGE

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WEATHERING THE STORM



FINANCIAL difficulties, real to some extent and imaginary to a greater extent, have been responsible for a decided stagnation of business in almost all lines in this country. Whatever may have been the direct cause will hardly be known, inasmuch as several things have been blamed for the trouble. The world has seen stocks bowled over, it has seen banks crumble and it has seen some commercial houses crushed. In all of the difficulty it has seen the motor car industry weathering the storm better than almost any other industry, when according to all reasoning it should have been one of the first to suffer. Conditions at this time seem to be improving, the clouds seem to be passing, but there may yet be some trouble. Perhaps the motor car industry will have more of a sea to pass through than it has seen and perhaps there will be more wrecks. As the matter now stands, however, the industry seems to have been so well protected as to be able, with something like normal conditions existing, to withstand the onslaughts and to pull through in even far better shape than most of the other manufacturing industries. Some months ago Motor Age pointed out the fact that it would be only natural for the motor car industry to be among the first to suffer in case of any material panic, because luxuries are the last things to find purchasers during times of financial depression. That the industry has kept going on in the even tenor of its way suggests that possibly it has worked out of the class of luxuries and has become thoroughly established as one of the necessities and as one of the real industries of the commercial world. It will not be disputed that at this moment sales are comparatively scarce, that factories are not rushed to fill orders—but these conditions naturally exist at this time of the year in the motor car business. There is a long time ahead before the people want new cars, there is better prospects of delivery on the part of the maker to the agent and so naturally the rush to place orders to secure deliveries has to some extent subsided. There has been some hesitancy on the part of the dealers to order goods and make deposits, some have been badly frightened and others have remained serene through it all. The financial troubles have been responsible for many of the makers curtailing to some extent their projected outputs; on the other hand most of them have gone ahead as if nothing had happened. No better illustration of the bright future of the motor car industry

can be given than to point to the immense crowds that attended the shows at New York and more recently at Philadelphia. These immense crowds point the way the wind blows; they indicate the possibilities and the probabilities of the motor car business for the coming season. Is it any wonder there should be a cessation of buying of motor cars during financial troubles, when wintry blasts make their appearance, when the season has been materially advanced and when the supply has been increased? Yet under all these unfavorable conditions the motor car industry has kept its head and shoulders well out of water; it has survived when other industries have been hard hit; it has shown only a very few weak spots and these weak spots have been well patched up, so it may be said that at this time the industry is intact and ready for a strenuous journey.

SHODDY ROAD REPAIRS



OURING in the late fall is robbed of some of its charms because of the condition of the country highways due to the annual work of road repair. No motorist is inclined to grumble because this work is being done; on the other hand he is apt to pat himself on the back and anticipate a fine ride a year hence and to congratulate the local authorities on their enterprise in keeping up the roads. Motorists might be of benefit to themselves and the community in general were they to organize if only for the purpose of endeavoring to prevail upon the township and county authorities to do just a little more in order to make their work practically perfect instead of incomplete. The average man who puts new gravel on the road in the fall simply dumps it there, leaving it to spread itself as best it can. It has been shown that a road drag can be made for a very few dollars, that one can be bought for a trifling sum and that the cost of hauling this over a mile of new gravel is comparatively nothing. The use of a drag and the winter's travel will make a gravel road practically perfect—good for the motorist and good for the user of horse-drawn vehicles. It will at the same time save the road. Any half-dozen enterprising motorists could with little difficulty secure the co-operation of a few of the users of horse-drawn vehicles and form a committee for the purpose of showing the authorities the necessity of properly spreading gravel after it has been hauled and dumped on the road.



WHAT OF THE SHOWS?



MOTOR CAR exhibitions are now on trial; a few weeks will determine whether the principal shows of the country are to be held in the fall, mid-winter or in the spring. There is a vast difference of opinion on the subject—there have been some experiments. From the promoters' point of view one time would seem to be as good as another, but so long as the promoter can be satisfied either way it would appear to be wise to consult the maker and seller in order to give those most interested the benefits they need in order to stimulate trade. There has been no lack of interest on the part of the public over shows, but there has been lack of sales at the shows. Is the lack of sales traceable to financial troubles or is it because of the fact that the shows are held so far in advance of the buying season? Those who have studied the matter thoroughly are now about convinced that so long as the shows have become retail affairs to a large extent the fall show is out of place, and that what are now needed are shows in the spring, at the dawn of the selling season, when enthusiasm runs high and a man feels like taking himself out for a little airing. So far as the retail business may be concerned it must be granted there has been little business done at the shows that have already been held; so far as the agency business may be concerned little is now transacted at shows. Therefore it would appear reasonable to accept the situation as it is and change the dates of the shows from the fall to rather late in the spring, to make them purely selling shows for the benefit of local dealers and the public in particular and the makers in general. Comparisons between this country and France or between this country and England are out of place. Conditions that exist abroad do not exist here and while in Paris and London there will always be what might be termed national shows that rule will not hold in this country. Possibly the suggestion that there be one strictly trade show is of some value, but until the separating influence of the Selden patent is disposed of perhaps it will be impossible to make a strictly trade affair for the benefit not only of the agents who are interested but the makers themselves. When the Chicago show has come to an end the trade will be in a position to more thoroughly judge of what is necessary in the matter of shows for the future, and it is a subject that ought to be considered with as little loss of time as possible, so all may know what to expect.



CURRENT COMMENT



DON QUIXOTE EDGE now is fighting the Standard Oil Co., since benzol being his lance. He has drawn first blood by effectively demonstrating that the English motoring world has relief in sight in the new fuel which has been proved suitable for use in motor car engines. Edge ran a Napier 3,000 miles, using benzol for fuel, and made 22.65 miles to the gallon. To prove his contention he ran 150 miles on gasoline, only making 18.14 miles to the gallon. At the same time he proved that the benzol is not injurious to the motor even in the crude state. When as carefully manufactured as gasoline and with the impurities removed he says there is no reason why England should not be in a position to defy the Standard Oil Co., as benzol is a by-product in Great Britain and comparatively cheap. The fact that benzol is available for fuel will have its effect upon the gasoline crowd abroad, as has the threatened invasion of denatured alcohol in this country. While the latter fuel has not come into general use on this side it is noticeable that there has not been any boosting of prices of gasoline of late.

MOTOR car manufacturers are going to the Chicago show with the idea that the bulk of the business is to be done in the west in 1908, and it is for the purpose of impressing the westerners as to the stability of their wares that so many of them have entered the Chicago show reliability run, which is being promoted by the Chicago Motor Club. That the affair

THE WEEK IN BRIEF



Seven perfect scores are made in unique 24-hour endurance road test in New Jersey, Matheson, Haynes, Oldsmobile, Locomobile, Ford, Franklin and Thomas going clean.

Twenty-eight cars representing twenty-one different makers already entered for Chicago show reliability run; indications point to at least forty starting next Tuesday.

C. J. Glidden secures permission from sultan of Turkey to tour through Palestine; cup donor favors next Glidden being held in the middle west and New England.

Decision handed down in Glen Echo case says fines imposed by Mayor Garrett and arrests made by Marshal Collins were illegal.

General Manager Miles busily working on Chicago show plans and is endeavoring to be ready for opening a week from Saturday.

Philadelphia's show has a successful week, some of the enthusiasts claiming more business was done than at the New York affairs.

Darracq is star performer in Exreux cup trials in France in which more than 100 motor vehicles of all sorts compete.

Fiat Cyclone makes best time in interesting hill-climb held at Providence by Rhode Island Automobile Club.

Boston reports a surprising retail business and laughs at hard times cry.

comes near being ideal for the purpose is shown by the fact that nearly all the big manufacturers are supporting it by entering, and it is to be hoped that their faith in the Chicago Motor Club will be vindicated next week. Six hundred miles in 3 days at this time of the year is a stunt of which any manufacturer might be proud, but when it is coupled with living up to the stiff rules laid down by the club it would seem that the winner will be elevated to a pedestal during the show which will make the car the cynosure of all eyes.

CLEVELAND'S efforts to educate the people as to what constitutes a model road is one that could be followed to advantage by clubs in other parts of the country which have been talking of what they would like to do to advance the cause of motoring. Indeed, it would not hurt the American Automobile Association to draw cards in this game. The Cleveland Automobile Club is the pioneer in this movement and it has raised sufficient funds to build 3 miles of road the way it ought to be built. When this is done it will be held up as an object lesson and the road-building contingent cannot but help profit by the lesson that is being offered.

AT FIRST glance one wonders why the Rhode Island Automobile Club should promote a hill-climb at this season of the year, but second thought shows considerable wisdom in carding contests in the late fall. Summer events, while instructive and serving to keep the public interested, come at a time when the selling season is about over and so the seed sown does not bear such profitable fruit as one might imagine. With late fall contests, however, there is more to be gained, for this is the time when the buyers are beginning to think of new models, and demonstrations of speed and hill-climbing are of great benefit in influencing sales.

PHILADELPHIA is bragging of the financial harvest reaped during the recent show and it seems like the silver lining to the motoring cloud. It claims to have excelled New York in the matter of business done, which, however, should not be taken as a disparagement of the garden or the palace, for it must be remembered that those affairs were held at a time when the financial situation was far from being bright. That Philadelphia should have done so well should be taken as an indication that the people are getting over their money panic and things are not so bad as they have been painted.

MARSHAL COLLINS probably is glad he lost his job on the conduit road at Glen Echo, Md. The circuit court at Rockville has ruled that all the arrests made by Collins were illegal, as well as the \$1,000 in fines imposed by Mayor Garrett. Glen Echo was made famous by Collins through the vigorous prosecution of every motorist who went faster than the legal rate of speed. He involved this country in diplomatic wars and altogether stirred up the eastern half as no other marshal has done. The ruling is that the conduit road, while under the general jurisdiction of Maryland, is not a public highway. So even if Collins had remained he would be jobless now. In some ways one cannot help but admire Collins' pertinacity, although in several instances he overstepped his authority. If there were more like Collins the seorchers who have done so much to give motoring a black eye would be more careful on the public highways.

AN ENDURANCE contest like the New Jersey event certainly is unique in the annals of motoring, and that seven cars should travel 472 miles in 24 hours without penalization bears out the contention that American-built motor cars are rapidly approaching a perfection that even surpasses those of foreign construction. Seven others survived, but with penalizations which shut them out of the silver cup class, yet their efforts went a long way towards demonstrating the practicability of the modern motor car.

COMING MOTOR EVENTS



Minor English Shows—Annual Stanley show, London, England, November 22-30; Liverpool show, March 20-28; Cordingley show, March 21-28.

Chicago Show Reliability—Chicago Motor Club's 600-mile 3 days' reliability run to South Bend, to Rockford and to Ottawa, November 26, 27, 28. Entries close November 21, midnight.

Chicago Shows—Eighth annual Chicago show, Coliseum, and first commercial vehicle show at Seventh Regiment armory, both November 30 to December 7. S. A. Miles, manager, New Southern hotel, Chicago.

Accessories Show—A. M. Andrews' accessories show in Brooke's Casino, Chicago, November 30-December 7.

Paris Salon—Tenth annual Paris salon in Paris, France, November 12-December 1.

St. Louis Show—Second annual show of St. Louis Manufacturers' and Dealers' Association, Jal Alai building, week of December 14-21; John J. Behen, chairman.

Detroit Show—Detroit Automobile Dealers' Association's show at Wolff's park, Detroit, week of December 9-16.

Hartford Show—Annual exhibition of Automobile Dealers' Association of Hartford, Conn., in Foot Guard armory, January 14-18.

TENDENCIES AT OLYMPIA SHOW

Six-Cylinder Cars Are Prominent in England's Big Exhibition— Live Axle Much in Evidence—High Tension Magneto Coming in—Disk Clutches Are Popular

London, Nov. 9.—Plans are complete for the opening of the sixth international motor car exhibition of the Society of Motor Manufacturers and Traders under the patronage of the king and prince of Wales next Monday. The fact that royalty is mixing in the game this year has aroused considerable interest and has resulted in a departure from precedent in that the Duke of Connaught will himself formally open the show where heretofore it has been allowed to open itself. It is more than probable that the duke will be accompanied by the king of Spain who, as all know, is an enthusiastic motorist. The cars are to be exhibited on the main floor of the big building while in the galleries will be located exhibitors of accessories and clothing.

It looks now as if there would be a record attendance at the show, so keen is the interest being displayed in the affair by the motoring world at large. Last year the official count gave the attendance at 192,496, but as that was for 9 days it seems probable that this time these figures will be beaten, for this show lasts 12 days. Those who have compiled a forecast to the show say that this year small cars are going to be a feature and that these machines will be largely equipped with four-cylinder engines, which are taking with the English despite the fact that two-cylinder motors have more than held up their own in competition.

While it is not believed that England will go crazy over the six-cylinder it would seem that a large number of this type will be on exhibition, among the new ones being a 60-horsepower Austin, a Gobron-Brillie, Miesse and a 30-horsepower Coventry-Humber. These will be found along with six-cylinders made by Napier, Darracq, Itala, Mercedes, Germain, Mors, Fiat, Rochet-Schneider, LaBuire, S. P. A., Vinot, Sheffield-Simplex, Orleans, Thames, Iris, Ariel-Simplex, Siddeley, Rolls-Royce, Standard, Leon-Bollee, Hotchkiss, Belsize, Thornycroft, Gladiator, Star, Vulcan, Wilson-Pilcher, Courier, Sunbeam, Brown, Clement, Florentia and Berliet. So far as is known no engine over a six-cylinder will be shown.

Evidently the live axle is going to be very much in evidence, it being found on the new 15-20-horsepower Panhard, the new Crossley, de Dietrich, Fiat and the 30 and 38-horsepower Daimlers. Cars like the Clement, Sunbeam, C. G. V. and Gladiator are using chain covers and it seems probable this device will come into popularity. It is pointed out that the chain-drive offers better facilities for altering the gear ratios where two or more types of bodies of different weights are used

with one chassis. The Darracq people have a new live axle which is a combination of live axle, differential and gear box, the last named being carried on the solid I section bridge axle, separate live shafts connecting the drive to the road wheels. Final drive in most cases is through dog clutches on the road wheels. The Darracq people are also casting their cylinders in one block while in the Miesse engine the six cylinders are cast as one unit. The scheme first introduced by the Rolls-Royce of casting six-cylinder engines in two units of three each is being followed by La Buire and Humber. The de Dions have quit using separately-cast cylinders and are following the practice of casting them in pairs.

The de Dietrich, following in the footsteps of many others, has quit the indirect drive, and direct drive on at least one speed is a practice that is being followed by many who will exhibit in the show. Four-speed gear boxes with direct drive on the third are being fitted on the 40-horsepower Austin, 40-horsepower Brooke, the S. C. A. T., six-cylinder Star and the 25-30-horsepower Vulcan. Many are using the gate system of change speed and ball bearings are being fitted to the gearshafts.

High-tension magneto ignition is coming in and will be found on many of the new models. This does not mean that the accumulator and coil have been sidetracked altogether. They are still liked as a supplementary system of ignition. The 40-horsepower Argyle has taken up the high-tension magneto and the Armstrong-Whitworth has discarded the low-tension magneto. The Mors, de Dietrich and S. C. A. T. stick to the low-tension magneto like the Crossley, Lindsey and the Bentall, although not many British makers follow this practice. Honeycomb radiators hold their own despite the fact that in the last show the tendency seemed to be to return to the gilled tubular type. It is pointed out that when the honeycomb type is built right and of the proper material it is satisfactory. The Gillet-Lehman carburetor device is fitted to several of the cars and seems to be popular. The automatic carburetor will be seen on every hand and in the high-powered models it will be noted that the device is equipped with two or more jets which can be cut off when the necessity arises. Some wick carburetors are seen and in the 40-horsepower Argyle there is a carburetor which permits of pure air being drawn into the engine.

Disk clutches will be found on the Napier, Argyle, Gladiator, Clement, Standard, Fiat, de Dion, Cadillac, Rover and the larger Panhards, while concerns like the LaBuire, Berliet, de Dietrich, Crossley

and Metallurgique find the expanding clutch working on the principle of an expanding brake meet their requirements. The metal cone clutch seemingly has not many followers, while the leather cone clutch is to be found on cars like the Darracq, Daimler, Hotchkiss, Humber, Ariel, Panhard, Peugeot, Brown and Vulcan. On the Darracq and de Dion it is noted that spark control on the steering wheel has been done away with, it being claimed that the increasing intensity of the spark as the speed of the armature rises with the engine revolutions per minute has practically the same effect on combustion as advancing the spark in the ordinary way when batteries are used.

MOVES IN THE POPE CASE

Toledo, O., Nov. 16.—Conditions at the Pope Motor Car Co.'s plant have been moving with a rapidity recently that has kept Toledo people guessing as to what would occur next. The coming and going of the receivers have lent an aspect of mystery to the situation which has, to say the least, been interesting. A short time ago George A. Yule, of Kenosha, Wis., was appointed by the federal court as an additional receiver to act in conjunction with Albert E. Pope, originally appointed. Last week came the rumors that a deal for the sale of the plant was being negotiated with eastern capitalists, and the probability that the plant would be sold within the next 30 days. This week comes the announcement that Albert E. Schaaf, who for years has held the position of manager for the Toledo concern, has been requested to resign by Receiver Pope, and that the request has been complied with. While asserting that Schaaf's management has been entirely satisfactory, yet the receiver has informed him that his connection in a managerial capacity is no longer wanted by the Papes. Mr. Schaaf recently returned from New York after having been there 3 weeks in connection with the sale of the plant to a syndicate of capitalists. While the sale has not yet been consummated, it is confidently asserted that only the stringency of the money market is holding it up. In the meantime, Harold Pope is in charge as manager.

BENZOL TEST SATISFACTORY

London, Nov. 8.—Because of the showing made by S. F. Edge's Napier in the recent 3,000-mile simcar benzol test, Mr. Edge is of the opinion that the fuel problem has been solved so far as England is concerned and that the gasoline trust will have to come to terms or be forced to face serious competition at the hands of the makers of benzol. The official report of the recent test shows that the Napier using benzol as a fuel averaged 22.65 miles per gallon while the ton mileage was 42.35. To compare it with gasoline Edge made a 1-day run over the 150-mile course that was used in the previous affair, with gasoline for fuel. This resulted in a showing

of 18.14 miles per gallon and a ton mileage of 33.94 miles per gallon. At the conclusion of the test the Napier was taken down and an examination of the top of the pistons made. This showed a slightly greater carbon deposit than occurs with gasoline but Edge points out that this, no doubt, was caused by the impurities in the benzol which was not especially prepared for the test. This benzol is simply a by-product in the manufacture of other substances and if it were made with as great care as is gasoline it would not carbonize so quickly, it is claimed. Mr. Edge made this test in order to prove that benzol is not injurious to the engine or valves and that he is right in his contention is shown by the fact that the examination has failed to disclose any difference in the cylinders, pistons, valve seatings, valve guides, valves, and valve stems. A standard carburetor such as is fitted to the ordinary Napier was used without alterations until the end of the first week, when the auxiliary air valve on the top of the carburetor was enlarged, it having developed that more air is required in using benzol than is the case with gasoline. The driver declares that so far as the work of the car is concerned he could not detect any difference between the benzol and gasoline, only that the former took more air. He had no difficulty in starting the engine cold and altogether he was well pleased. The specific gravity of the benzol varied from .850 to .885.

TRUCK MAKER IN TROUBLE

Kansas City, Mo., Nov. 16—A petition in involuntary bankruptcy has been filed in the federal court here against the Kansas City Motor Car Co. The petitioners are F. E. Wear, president of the company; G. S. Blakeslee, of Kansas City, and the William C. Johnson & Sons Machinery Co., of St. Louis. The financial stringency is blamed and the statement made that an effort to resume will be made. Assets are rated at \$150,000 and liabilities at \$300,000. The company is engaged in the manufacture of the Phoenix 3-ton truck. One of the good assets is 60 acres of land in Sheffield, adjoining the factory, valued at \$2,000 an acre. The officers of the concern are: F. E. Wear, president; Rinehold Caps, secretary, and L. M. Dieterich, general manager.

TRADE ELECTION IN HARTFORD

Hartford, Conn., Nov. 16—William Hooker Atwood, of New Haven, has been elected president of the New Haven Carriage Co., a subsidiary company of the Electric Vehicle Co., to succeed Milton J. Budlong, resigned. Walter G. Henderson, the newly elected president of the Electric Vehicle Co., has been made vice president to fill the office left vacant by the promotion of Mr. Atwood. The New Haven Carriage Co. is located at New Haven and makes practically all the bodies used on Columbia gasoline or electric cars.

RACE FOR EVREUX CUP

Field of 104 Contests in Annual French Event—Darracq Car Is the Star of the Day

Paris, Nov. 3—One hundred and four motor cars, motor cycles, commercial cars and tri-cars competed today at Evreux for the Evreux cup before a large gathering. The event was by no means an easy one to follow because of the fact that there were no fewer than thirty-six classes, but, that apart, it may be said without exaggeration that the race was one of exceptional interest. Some excellent—even noteworthy—performances were made, as for instance the achievement of the Darracq racing car driven by Rigal, which covered the kilometer on the flat in 42½ seconds and completed a total mile uphill on a stiff gradient in 1 minute 1½ seconds. The Benz of the kaiser cup type covered the same distances in 48 seconds and 1 minute 9½ seconds respectively, while other feats were recorded at very creditable speeds.

The meeting was quite the event of the year for the inhabitants of the sleepy little town of Evreux, which found in it consolation for the fact that it was not selected by the Automobile Club of France as the starting point of this year's grand prix race. The course was in very fine condition, the sandy ground being hard and dry despite the recent rains.

Under the conditions of the meeting the competing cars were required to run in their several classes over a kilometer with a flying start on the level, first and second in the classification becoming eligible for the final, in which they had to run the kilometer from a standing start, and, without stopping, finish the mile by traveling 600 meters uphill. The process of elimination occupied 3½ hours, and soon after midday the finals were undertaken with the following results:

Motor cycles under 30 kilos—Griffon won. Time, kilometer, 1:11 4-5; mile, 1:57 4-5.

Class A, with a maximum cylinder capacity of one-third of a litre—Peugeot won. Time, kilometer, :58 1-5; mile, 1:31 2-5.

Voiturettes, coupe des voiturettes type—Sizaire & Naudin won. Time, kilometer, 1:05 2-5; mile, 1:47 3-5.

Single-cylinder cars, maximum bore, 125 millimeters—Crespelle won. Time, kilometer, 1:33 3-5; mile, 2:46. Over 125 millimeters—Le Metals; kilometer, 1:19 4-5; mile, 2:12 3-5.

Four-cylinder cars, class A, maximum bore 80 millimeters—Roy won. Time, kilometer, 1:04 3-5; mile, 1:46. Class B, maximum 85 millimeters—Passe-Partout won. Time, kilometer, 1:09 2-5; mile, 1:53 4-5. Class C, maximum bore 90 millimeters—Werner won. Time, kilometer, 1:11 2-5; mile, 1:55 4-5. Class E, maximum bore 110 millimeters—Mors won. Time, kilometer, 1:02 3-5; mile, 1:39 4-5. Class F, maximum 120 millimeters—Benz won. Time, kilometer, :48 2-5; mile, 1:14 2-5. Class G, maximum bore 125 millimeters—Mors won. Time, kilometer, :31; mile, 1:17 2-5. Class H, maximum bore 130 millimeters—Motobloc won. Time, kilometer, 1:06; mile, 1:40 2-5. Class H, maximum 130 millimeters, enclosed bodies—Lorraine-Dietrich won. Time, kilometer, 1:01 1-5; mile, 1:37 1-5. Class I, maximum bore 140 millimeters—Minerva won. Time, kilometer, :48 1-5; mile, 1:11 3-5. Class J, over 141 millimeters bore—Mors won. Time, kilometer, :54 1-5; mile, 1:18 1-5.

Six-cylinder cars, class A, maximum bore 90

millimeters—Busson Dedeyn won. Time, kilometer, :57 1-5; mile, 1:16 3-5. Class B, maximum bore, 110 millimeters—Minerva won. Time, 1:25 3-5; mile, 2:09. This car carried six passengers. Class C, over 111 millimeters bore—Brasler won. Time, kilometer, :50 1-5; mile, 1:15. In the flexibility contest the result was a win for the Brasler.

Motor cycles, for machines weighing over 50 kilos—Alcyon won. Time, kilometer, :54; mile, 1:17.

Voiturettes up to 400 kilos—Sizaire & Naudin won. Time, kilometer, 1:01 2-5; mile, 1:39 4-5.

Racing cars, kaiser cup type—Benz won. Time, kilometer, :48; mile, 1:09 2-5.

Targa Florio type—Darracq won. Time, kilometer, :47 1-5; mile, 1:09 4-5.

Unrestricted class—Darracq won. Time, kilometer, :42 4-5; mile, 1:01 3-5.

There was a special class for commercial vehicles, but only one car appeared to participate. This was an Olympia-Dufour lorry, carrying bags of sand and weighing in all 3 tons, 225 pounds, which covered the level kilometer in 3 minutes 58½ seconds and the mile in 8 minutes 59½ seconds. In the latter time, of course, 600 meters of the mile were run on the hill.

PROSPERITY AT THE HUB

Boston, Mass., Nov. 20—As an evidence that the motor car business is not suffering in this section there were sold here within a week cars valued at more than \$50,000. These were not deliveries of machines that had been ordered previously, but were orders that came in, some of them unsolicited. J. W. Maguire, the representative of the Pierce-Arrow here, sold four of the smaller six-cylinder machines. J. W. Bowman, who has the Stevens-Duryea agency, sold three cars, two of them large six-cylinder machines. Three Packard cars were sold by Alvan T. Fuller. There were five Maxwell cars sold by F. J. Tyler, and J. H. MacAlman sold two Columbias, one of them an electric. There were undoubtedly other machines sold of which the Motor Age correspondent had not heard, but the above were verified by checks accompanying the orders. There has been no laying off of men in any of the repair places because of lack of work or stringency of funds. The cars are coming in to the places in good numbers to be overhauled for the winter, and very few men have ordered their cars stored. There has been no cancellation of orders reported and the outlook in New England seems better than ever. One evidence of this is the fact that a dealer here who last year had but 110 machines allotted to him has ordered 225 \$4,500 cars for 1908.

WILL BUILD MODEL ROAD

Cleveland, O., Nov. 18—The long-talked-of road improvement work by the Cleveland Automobile Club on a bad stretch of the main highway in Euclid, east of Cleveland, seems likely to be carried out. Sufficient funds to build about 3 miles of model road have been subscribed after much hard work on the part of the club, and a contract has been let for the building of this stretch. Secretary Asa Goddard, of the Cleveland club, will represent the club in charge of the construction work.

CORRECT ANGLES OF STEERING KNUCKLE ARMS

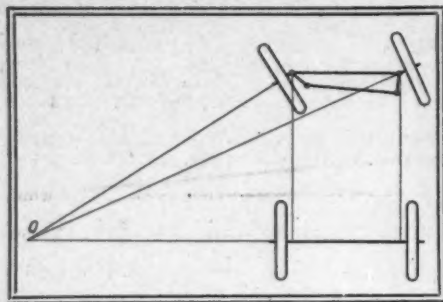


FIGURE 1

EVERYBODY knows that the knuckle arms of the ordinary forms of steering gear must not be parallel. Everybody likewise knows that when these arms project forward they should diverge, and that when they extend rearwardly they should converge. But the exact amount of divergence or convergence needed to produce correct steering is little known outside the drafting rooms of motor car factories, and, it may be suspected, not always in these. The repairman who is called upon to restore a bent knuckle arm to its original form is obliged to trust entirely to the length of the cross links being correct, and to proceed by disconnecting this link from the knuckles, and then measuring the amount of bend which the knuckle arm or arms must receive to render the wheels parallel when steering straight ahead. In case both arms have been bent the success of this process depends a good deal on judgment and luck, since it is not easy to bend both arms to the same angle and have the correct distance between them when the job is done. In case the knuckles were incorrect to start with the cross link is likewise incorrect in length, and the unfortunate owner may easily spend a good deal on one repair shop after another in the endeavor to correct the original fault.

There is a somewhat general notion that the arm angles are correct when lines connecting the centers of the steering pivots with the pins in the ends of the arms intersect at the center of the rear axle. It is also frequently assumed that the proper angle for the arms will be the same, whether the arms extend forward or back. Both of these ideas are erroneous, as will presently be shown. The required condition for perfect steering is shown in figure 1, in which the produced axes of the front wheels intersect the axis of the rear wheels at a given point O. With this condition fulfilled, the vehicle will travel around O as an imaginary center without side-slipping of any of the wheels. This condition is only approximately fulfilled by the Ackerman type of steering gear in common use; but by selecting the proper angles for the knuckle arms the error of deflection between the two front wheels may be made less than 1 degree for all deflections up to about 45 degrees, which

is a greater deflection than is commonly used in practice. The exact arm angles for the best results will depend somewhat on the wheelbase and the distance between the steering pivots, but angles sufficiently good for all ordinary purposes may be taken arbitrarily and will fit any ordinary runabout or touring car. These angles are indicated in a later paragraph.

As the process by which the correct arm angles are derived is little known, it may be of interest to describe it in detail. The first step is to ascertain by calculating the correct deflections of the outer front wheel for given deflections of the inner wheel. Referring to figure 2, let m be the deflection in degrees of the inner wheel, whose pivot is at A, and n be the correct deflection of the outer wheel pivoted at B. Let a be the distance between pivots and b be the wheelbase. Then

$$\begin{aligned} \frac{AC}{CO} &= \cot m \\ \frac{BC}{CO} &= \cot n \\ \text{Then } \frac{BC-AC}{CO} &= \cot n - \cot m \frac{a}{b} \\ \cot n &= \cot m + \frac{a}{b} \end{aligned}$$

By assigning values to a and b the correct deflection of the outer wheel for all the deflections of the inner wheel can be readily calculated by the use of a trigonometrical table. It is convenient to calculate these four inner wheel deflections of 5, 10, 15, etc., up to 45 degrees. In the table are given the correct outer wheel deflections for the following representative cases: $a=50$ inches, $b=132$; $a=50$, $b=108$; $a=48$, $b=84$.

To determine the arm angles which will

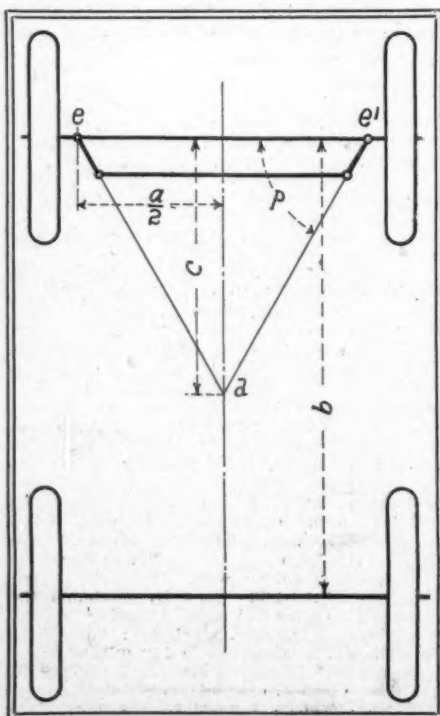


FIGURE 3

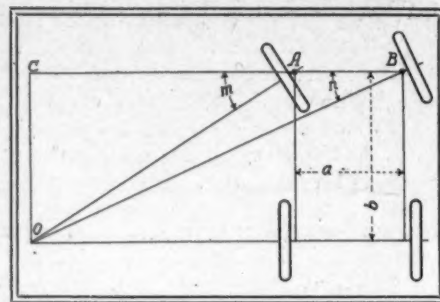


FIGURE 2

produce deflections as nearly correct as possible, it is necessary to assume angles arbitrarily and plot the resulting deflections by trial on the drawing board. For this purpose it is easiest to start with the point d, figure 3, at which the lines de' intersect the longitudinal axis of the car. If we represent by C the distance from the center of the front axle to the point d, we have

$$\frac{a}{2C} = \cot p$$

from which p is readily found by calculation, if C is taken in terms of b , such as 0.5 b , 0.8 b , b , etc. It is of course equally suitable to determine p by laying out d on the drawing board, and measuring the arm angles with the protractor.

Having determined the values of p by calculation or trial for given values of C, the corresponding actual deflections of the outer wheel are laid out by trial on the drawing board, as in figure 4. First lay down the centers of the wheel pivots to scale—full size if possible—and connect them by a straight line representing the line of the front axle. With a protractor lay off the arm angles p corresponding to the value selected for C, and strike arcs about the pivots as centers with radii equal to center-to-center length of the arms. In figure 4 this has been done for a wheelbase of 108 inches with $C=0.8b$. The distance between the pivots is 50 inches, as in the table. In this case $p=73.85$ degrees, as the drawing indicates. Taking the left-hand pivot as belonging to the inner wheel, spaces are stepped off 5 degrees apart, up to 45 degrees, on the arc swept by the end of the arm. From each of these 5-degree points the corresponding position of the right-hand end of the cross link is measured off on the arc swept by the right-hand arm. Finally the resulting deflections of the right-hand or outer angle are measured with the protractor. These deflections will be a little greater or a little less than the correct deflections as calculated by the formula

$$\cot n = \cot m + \frac{a}{b}$$

If the deflections are too great, the front wheels will converge forward—or toe in; if they are too small, the front wheels will diverge, or spread. The difference be-

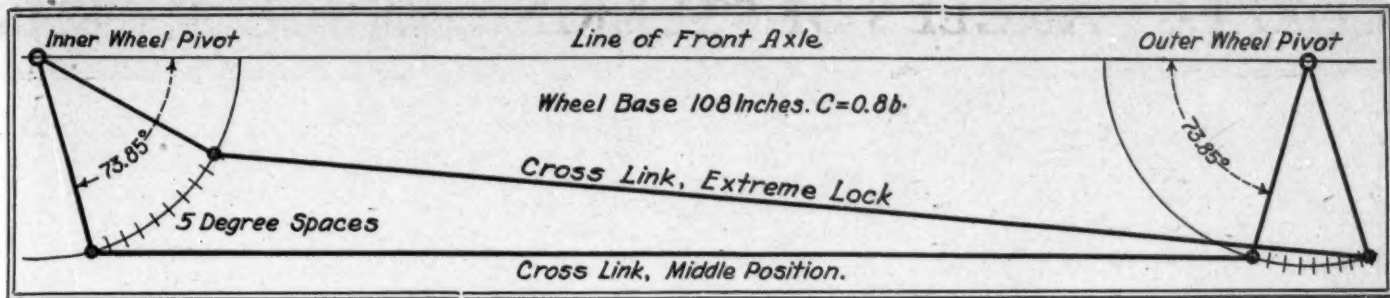


FIGURE 4

tween the actual and the correct deflections may then be plotted, as is done in figure 5 for the wheelbase noted in table above, and for the values of C indicated.

In the diagrams, figure 5, divergence of the front wheels is measured above the zero line, and convergence below. In the greater number of cases the arms have been assumed to project rearwardly; but for three values of C in the second diagram, the arms have been taken projecting forward. It will be seen that whether the arms project to the front or rear, the value of $C=b$ invariably causes the wheels to converge considerably from their true angles. The second diagram, in which C has been taken equal to $0.8b$ for both front and rear arms, shows clearly that the deflections are quite different for these two cases. A study of all the curves shows that for rearwardly projecting arms the value $C=0.7b$ will give the least error for deflections up to about 35 degrees, which covers all cases usually met with. If the arms extend forward, the best value is $C=0.5b$ or $0.6b$; in other words, the arm angles must be greater for forward arms than for rearward arms. Inasmuch as it is the endeavor of every designer to bring the knuckle pivots as close to the wheels as possible, it is evident that the correct arm angles will cause the arms to interfere with the spokes of the wheels in a considerable number of cases, and it is doubtless for this reason as much as any other, that the present tendency is to use rearward arms.

In applying the above procedure in the repair shop, the best plan where possible, is to plot the whole diagram substantially as in figure 3, directly on the floor under

the car. Plumb lines will locate the pivot centers e and e' on the floor. C may be taken as $0.6b$ or $0.7b$ according to whether the arms extend forward or back. When d is correctly located, the distances de and de' will be equal. Plumb lines dropped from the end centers of the arms will give the arm lengths, and with these properly located on the lines de and de' , the correct length of the cross link is at once found. Strings may be used for the straight lines,

tions of the outer wheel and practically it may be ignored.

MAKING MOTOR PARTS

In taking apart and reassembling a car it is most essential that many parts not only be put back in their right places, but that they be replaced in some fitted relation to one another. Thus the mixing of valves, or even of bolts, all of which may appear similar, the transposition of pistons or the improper meshing of a pair of gears may occasion serious trouble in tuning up a car. In the original assembling, mixing up of fitted parts usually is provided against by arbitrary systems of punch marks. But as these are apt to be intelligible only to one very familiar with the particular make of car, the careful mechanic always provides against subsequent trouble by establishing a new system of marks as he takes the car apart.

TO DETECT KNOCKING

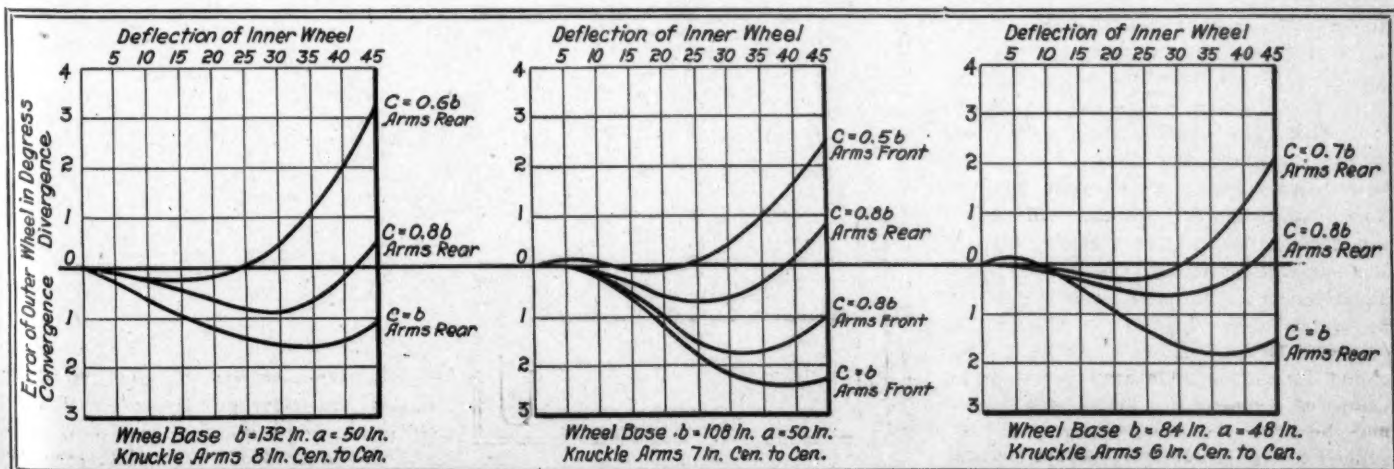
The diagnosing of a knock or pound in an engine often is a very difficult matter, especially to the unmechanical ear, not trained to a keen appraisal of all the sounds that can be produced by a piece of machinery in operation. This makes it worthy of note that there is another means almost equally effective for the same purpose. This is the jar or vibration produced, which is very perceptible if the hand be laid lightly on any solid metal portion of the forward part of the car, especially while the machine is pulling hard, at a good speed. Tested in this way, a loose bearing will produce a recurrent knock that cannot be mistaken.

Table of correct outer wheel deflections; n for given deflections, m of inner wheels.

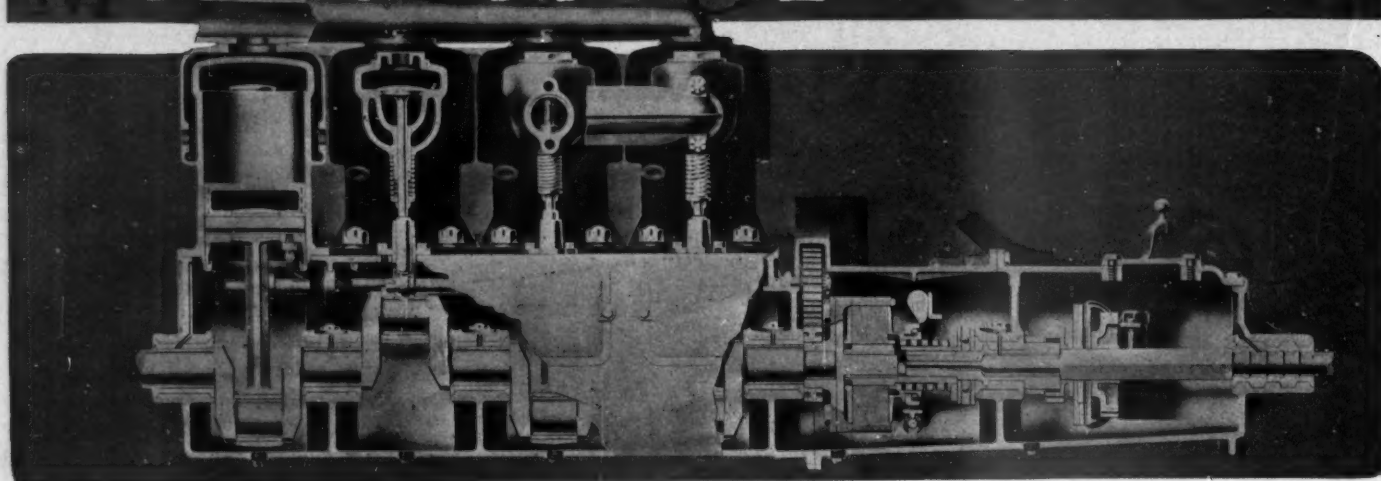
| m Degrees | Wheel base | | |
|----------------|------------|------------|------------|
| | 84 in. | 108 in. | 132 in. |
| 5 | 4.8 | 4.8 | 4.8 |
| 10 | 9.1 | 9.3 | 9.4 |
| 15 | 13.1 | 13.4 | 13.7 |
| 20 | 16.8 | 17.3 | 17.7 |
| 25 | 20.2 | 20.8 | 21.6 |
| 30 | 23.5 | 24.5 | 25.3 |
| 35 | 26.6 | 27.9 | 29. |
| 40 | 29.6 | 31.2 | 32.5 |
| 45 | 32.5 | 34.4 | 36. |
| | $a=48$ in. | $a=50$ in. | $a=50$ in. |

and nails to locate the centers on the floor. With the front wheels pointing straight ahead, the necessary bend, if any, for each arm is determined by a plumb line dropped from the end center. If the arms require much bending, it will be well to allow for the fact that they cannot be bent close to the body of the knuckle, and their length will therefore be slightly changed, which will modify the length of the cross link. The length of the knuckle arms has but a slight effect on the deflec-

FIGURE 5



MOTOR CAR DEVELOPMENT



POWER AND TRANSMISSION PLANT IN THE NEW MODEL D MAXWELL CAR

THE new Maxwell model for next year is labeled model D. It is a four-cylinder machine with a 24-28-horsepower rating, and in most details is a smaller size of the 40-horsepower car that was marketed in considerable numbers during the season just closing. Model D has separately-cast cylinders, with valves on opposite sides, the bore measuring $4\frac{1}{4}$ inches and the stroke $4\frac{1}{2}$ inches. Using separate cylinder castings has permitted of a five-bearing crankshaft. Apart from the motor the car is designed closely after that familiar Maxwell scheme, with the multiple disk clutch enclosed in a separate compartment between the crankcase and the gearbox and the three-part casting-crankcase, clutchcase and gearbox—supported on a three-point suspension. The motor flywheel is at the forward end, the half-time gears are at the rear end of the crankcase and the casting of the flywheel with fan spokes eliminates the fan from the cooling system, which, taken in con-

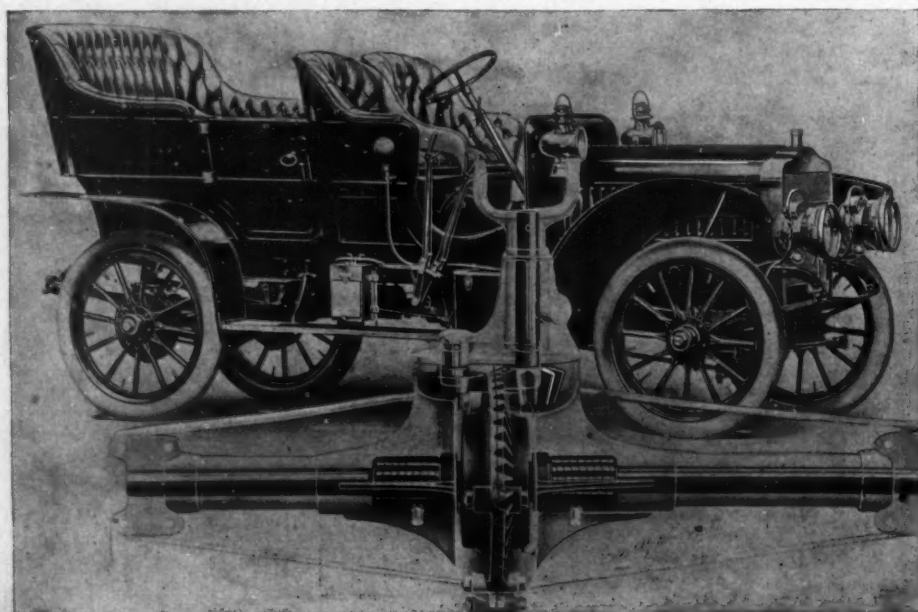
junction with the thermo-syphon water cooling, gives a very simple cooling problem.

As revealed in the illustration at the top of this page, the camshafts are completely housed in the crankcase and separate cams are conveniently attached, but slightly out of the order is the dispensing with rollers on the bottoms of the valve lifter rods and the substitution thereof of very large-diameter push rods with the lower ends well rounded where they rest upon the cams. Several American makers prefer the rounded foot on the bottom of the push rod to the rollers, they foot face achieves the same result as the claiming that the special contour of the roller. Valves are made with integral heads and stems, the latter beveled to 45 degrees and the crankcase instead of being cast in upper and lower halves is of the box design, with inspection plates on the left and right sides. Peculiar with these motors in the thermo-syphon water

flow is the large waterjacket opening in the jacket head to which attaches direct the flattened lower face of the large return flow water pipe. This pipe after hugging the jacket heads divides in front of the forward cylinder, sending a branch to the right and another to the left side of the radiator, not to the radiator top, but entering it at practically two-thirds of its height. The entering water current departs from the radiator base through a metal pipe which connects by tubing with each jacket base on the left.

In lubricating the motor in addition to placing a McCord lubricator on the dash in view of the driver and belt driving it off the motor, the cylinders carry on their bottoms a grooved brass ring which is filled by an oiler lead for each cylinder and the overflow from each augmenting the splash. The lower end of the piston on the bottom of the stroke dips into the oil in the brass ring and distributes the oil, so picked up, over the cylinder surface. Pistons carry three compression rings, all located above the wrist pin, which pin is, by the way, held into the piston bosses by a set screw. Carburation is through a float feed carburetor of Maxwell design, fashioned along the same lines as those used during the past summer on the big Maxwell cars; and in the ignition problem are combined storage and dry cells as current producers, together with four-unit dash coil and timer. Spark plugs are carried vertically in the caps over the intake valves.

Although the practical introducers of disk clutches in America, or at least among the earliest users, the Maxwell cars continue the original form with few changes, and in the D are twenty-four disks, with which must also be reckoned the master disk, making twenty-five in all, which are divided into two sets of twelve and thirteen. These operate constantly in oil, the engaging ring has ball thrust bearings and a ball thrust is placed in rear of the engaging spring. The transmis-

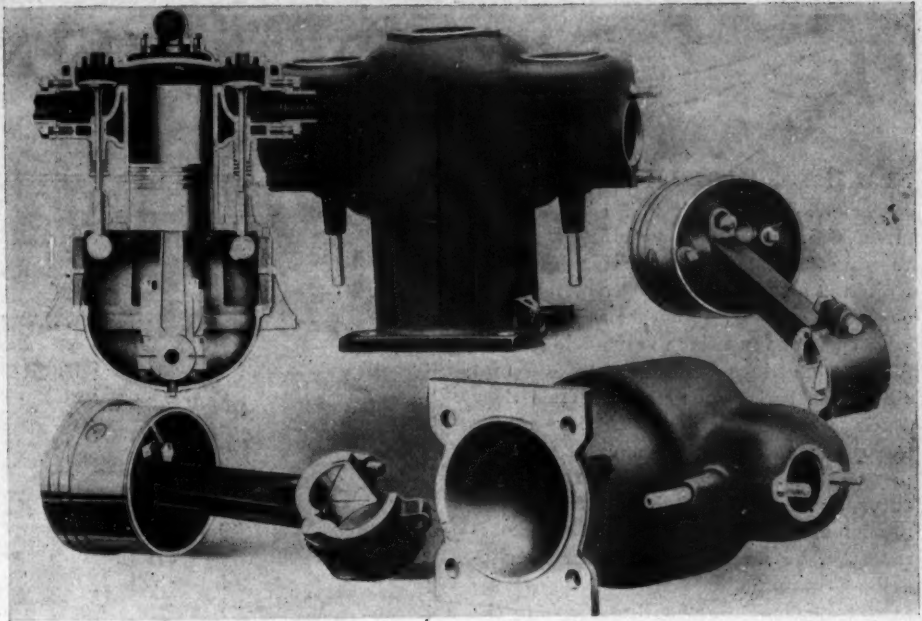


MAXWELL MODEL D TOURING CAR AND ITS REAR AXLE

sion operating on the straight, or rather progressive, sliding principle gives three forward variations and the customary reverse, all obtained by a right side lever. Drive is through a universally-jointed shaft with joints provided with oil jackets and self-oiling facilities. Hyatt roller bearings support the rear axle driveshafts and a dummy bevel gear is positioned behind the differential bevel to absorb the thrust occasioned by the bevel pinion on the rear end of the driveshaft.

On the rear wheel hubs are internal and external brakes, the internal shoes expanded by a cam operating between the ends of the shoes and the external bands provided with a most accessible and quick adjusting means whereby the turning of a hex nut with the fingers varies the adjustment. A spring bearing upon the surface of the hex nut serves as a locker. The forward axle is a tubular member, having the two-piece steering knuckles and with the tie rod in front of the axle. Frame sides are pressed steel members, springs are front and rear semi-elliptics and steering is through a rack and pinion gear—a small pinion on the lower end of the steering column and a semi-circular rack operating in a vertical plane at its right. A torsion rod is not used in connection with the driveshaft and side radius rods are not in use, the absence of these members being in keeping with Maxwell practice for the past seasons. Wheels, made 32 inches in diameter, carry 3½-inch tires, the wheel-base measures 96 inches and the tread is standard. Complete the car with touring equipment weighs 2,100 pounds. It is manufactured also as limousine and runabout.

In addition to the D the Maxwell model M 40-horsepower touring car and limousine will be continued. Its characteristic features are Maxwell from front to rear, including separately-cast cylinders with opposite valves, disk clutch, progressive sliding gearset and shaft drive. The motor club clutchcase and gearcase are in one supported on a three-point system, and, in sooth, the model D just described was



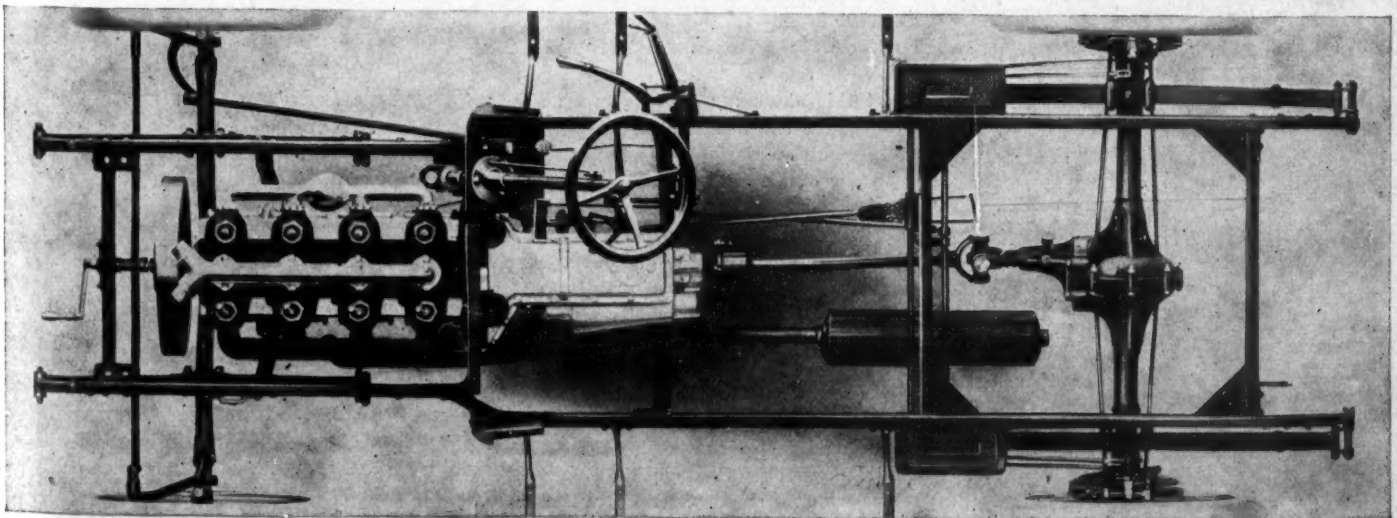
ASSEMBLY OF MOTOR IN MAXWELL MODEL D CAR

fashioned entirely after the big brother except for such features as the M possesses, like worm steering gear, 34-inch wheels with 4 and 4½-inch tires, 104-inch wheel-base and cylinders having a 5-inch bore and stroke.

But while marketing in large numbers a couple of four-cylinder cars the little runabout and the doctor's car and touring car built on the same chassis are continued. There is thus three two-cylinder cars and two four-cylinder models—five in all. The runabout 14-horsepower with 4½ by 4-inch cylinder is made older looking and more mature by the addition of a running board uniting the front and rear fenders, and an option is given of a body with either divided or non-divided seats. Otherwise the familiar little car carries its 1908 flag with the same constructions and designs it had in 1907. There is a change, however, in the ball bearings made for the road wheels, but which change was made in the late 1907 deliveries, and which consists in the use of three-point bearings for the balls instead

of two-point designs as used in the earlier part of the season. The three-point style is less liable to crush owing to the arrangement of the bearing surfaces or cones for the balls.

The doctor's car is sold fully equipped with top and lamps and has had its wheel-base lengthened 5 inches. The steering knuckles are in two pieces—the vertical hub part with the spindle for the road wheel being one part and the forward arm to which the tie rod attaches is another piece. The aim in making them in two parts appears to be the ability to replace a knuckle part should it bend without replacing the entire construction. The running board and fenders are improved by the addition of mud flaps connecting their inner edges with the car frame making a mudproof construction. As a doctor's car it is fitted with a two-passenger body, but is also sold as a five-passenger tonneau, the car being the same as made the long sealed-bonnet performance in connection with the Chicago Motor Club's sealed-bonnet test and the Glidden tour.

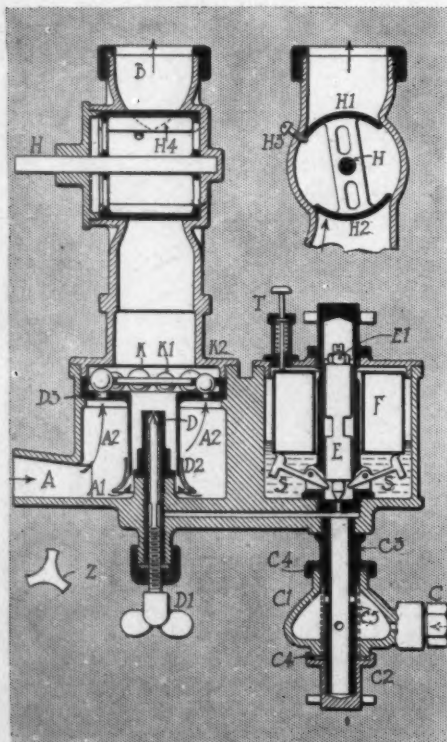


CHASSIS OF FOUR-CYLINDER MAXWELL, SHOWING ITS SEPARATELY-CAST CYLINDERS

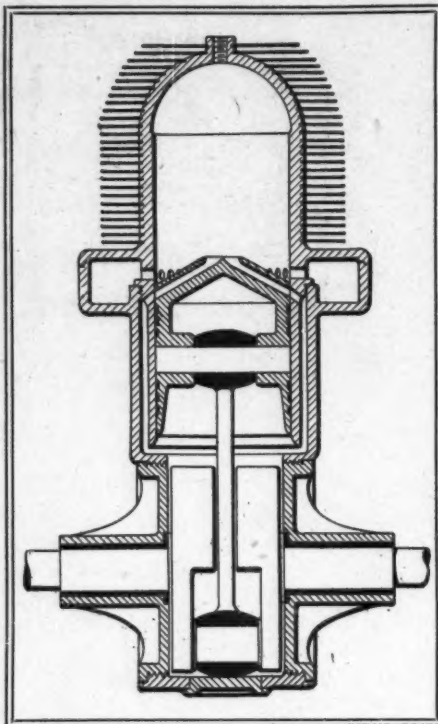
DEVELOPMENT BRIEFS

NEW IDEAS IN THE GRILLIER

The W. H. O'Brien Co., 115 Dearborn street, Chicago, is among the first manufacturers to market a carbureter having a main and auxiliary supply and without the use of springs of any nature in connection with each, the auxiliary valve being in the form of openings obstructed by different sized steel balls that are lifted from their seatings by the suction pull of the motor. The sectional illustration explains the complete design. Regular and auxiliary air enter by the horizontal opening A; the regular air, following the course of the arrows A1, passes upward through a cylindrical strangling tube with an adjustable funnel ending B2 which threads on to the main part of the tube so it can be raised or lowered from the floor of the mixing chamber. The normal air, when nearing the top of the strangling tube, passes the tip of the needle valve D which is enclosed in a standpipe with a single small-diameter top opening through which the gasoline escapes. From the top of the strangling tube there is a free opening until the throttle H is reached which is a rotating member with the curved shutter part H1 and a similarly curved shutter part H2, both of sufficient size to entirely obstruct the exit passage B to the motor. The cylindrical portion of the pipe B which carries this throttle has a peculiar triangular-shaped opening H4 which is covered and uncovered by the curved parts H1 and H2 of the throttle so the first movement of the



SECTION OF GRILLIER CARBURETER



LIBBY'S TWO-CYCLE MOTOR

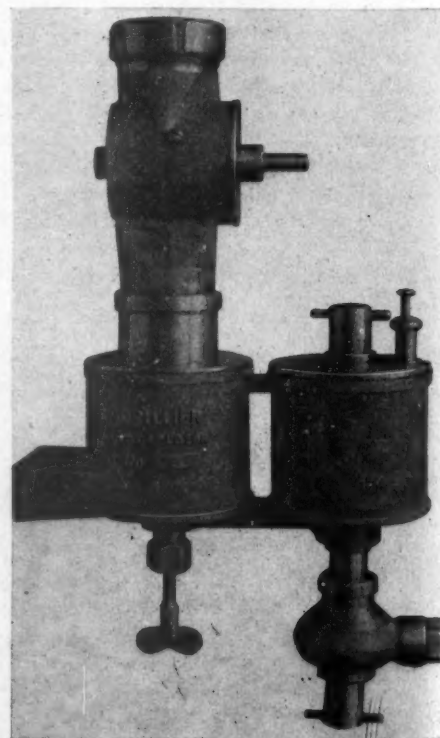
throttle gives a very small passage at the angle of the H4 opening and as the throttle is rotated the width of the opening increases. Auxiliary air, also entering by the passage A, does not enter the funnel ending D2 of the strangling tube, but passes upward outside of it, following the course of the arrow A2. In its upward course it encounters the circle of different-sized steel balls K, K1 and K2 which obstruct variable-sized openings in the plate D3 which extends from the strangling tube to the carbureter casing and forms an obstruction to the air. When sufficient air cannot enter by way of the strangling tube, then one by one the balls K, K1 and K2 are lifted from their seatings by the pull of the motor and additional air allowed to reach the motor. It will be noted that this extra air does not pass close to the tip of the needle valve D and so the motor pull on the gasoline is not increased and an over-rich mixture on high speed avoided.

The gasoline system of this carbureter is little different from the ordinary. The fuel from the gasoline tank enters by way of the opening C which is carried on a universal expansion C1 held to the tubing C3 by a nut with T head C2. By loosening C2 the expansion C1 can be turned at any direction, giving a universal coupling with a fuel tank. Gaskets C4 are in use above and below the universal coupling and the presence of a gauze filter C5, which is carried on the nut C2, prevents dirt from en-

tering the float chamber. The float is a ring member F within which is an adjustable stem E. The float rests on a pair of levers S, the inner ends of which bear, as illustrated, upon the float stem E. The height of the float may be varied by the nut E1. T is a press button for priming purposes. The needle valve D1 is removable and has as its leading merit three grooves in its sides, so the gasoline rising to the pointed tip D is divided into three flows as illustrated at Z in the lower left of the illustration.

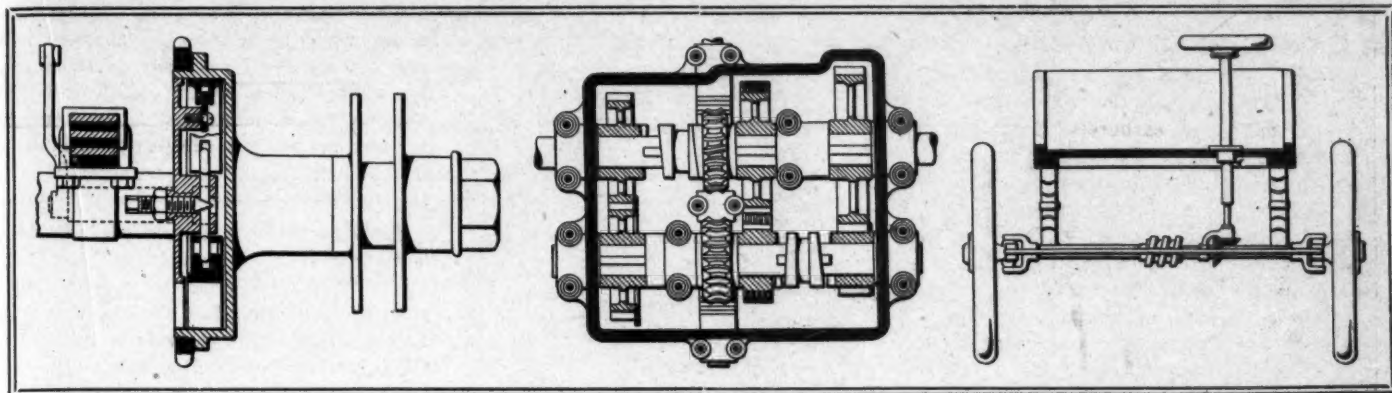
THE IMPORTED VELOGRAPH

The National Sales Corporation handles among its many importations the velograph, which is a device well suited for commercial machines. The velograph made in Berlin is a sort of traveling time clock which is attached to the dashboard of a vehicle and gives to the employer a reliable graphic record of just what the driver of the vehicle has done from the time he leaves the garage until he returns. The mechanism is driven by a pinion and bracket from the rear hub with a flexible transmitter. The clock-work in the velograph proper revolves a disk upon which is recorded the distance traveled, the speed at which the vehicle has proceeded, the stops made, and the duration of these, and this disk when removed from the velograph at the close of the day gives a record how the vehicle has been employed.



THE GRILLIER CARBURETER

CURRENT MOTOR CAR PATENTS



COOKINGHAM'S EXPANDING BRAKE

COLGREN'S GEARSET

THE NORRIS STEERING GEAR

Two-Cycle Engine—No. 870,240, dated Nov. 5; to D. Libby, Jr., San Francisco, Cal.—The patented design in this two-cycle motor is that the incoming gases enter between the true and false heads of the piston. Both intake and exhaust openings are in the form of ports in the cylinder walls, the exhaust ports being above the intakes, so exhausting is above the false cylinder head. When the piston is at the bottom of the stroke the space between the true and false heads is in register with the intake ports in the cylinder walls.

Steering Mechanism—No. 870,794, dated November 12; to H. E. Norris, Arnold, O.—On the bottom of the steering column is a bevel gear meshing with a similar bevel on a horizontal shaft in front of the axle and on this shaft is a worm gear. On the tie rod uniting the knuckles is a series of horizontal pins with rollers arranged so that the worm meshes with the rollers.

Non-Skid Attachment—No. 870,796, dated November 12; to R. Parker, New

York, N. Y.—This protector covering the tread of the tire has no connection with the wheel rim at one side having therein only a continuous wire to prevent its slipping over the tread. At the opposite side is a series of holders connecting the edge of the tread with the rim of the wheel.

Speed Indicator—No. 870,795, dated November 12; to E. C. Oliver, Minneapolis, Minn.—The actuating mechanism in this speed indicator comprises a rotating spindle carrying a pivoted governor weight in the form of a ring which ring has a cam surface. A lever is arranged to engage with this cam surface and which lever is actuated by the movement of the governor weight through the cam. Means are provided for holding the lever in engagement with the cam surface. The effective leverage varies with the speed of rotation. The usual connections are made with the indicating dial.

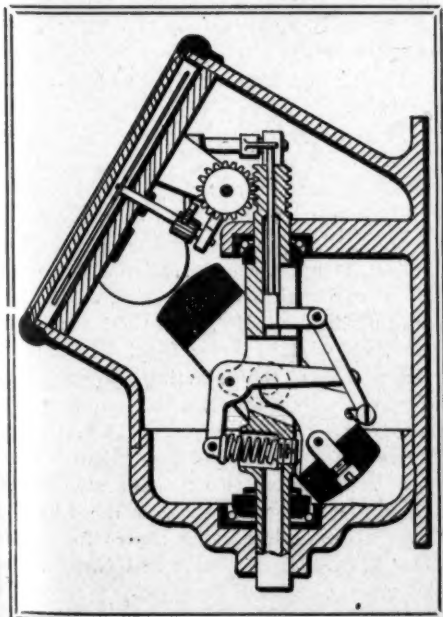
Expanding Brake—No. 870,666, dated November 12; to D. W. Cookingham, Cleveland, O.—This brake combines a brake drum within which are two friction shoes adapted to be forced against the drum surface. These shoes are pivotally supported and wholly encased although accessible from the exterior in case of adjustment. To force the brake shoes into engagement with the drum a member is mounted slidably on a rotatable head and placed to transmit thrust to each shoe upon rotation of the head, the reaction from each shoe being transmitted to the other shoe.

Tire Non-Slip Attachment—No. 870,657, dated November 12; to C. B. Woodworth, Newton, Mass. This non-skid attachment consists of a number of flexible straps extending across the tread of the tire and having on their ends rings so that links unite the ends of all of the straps on one side together.

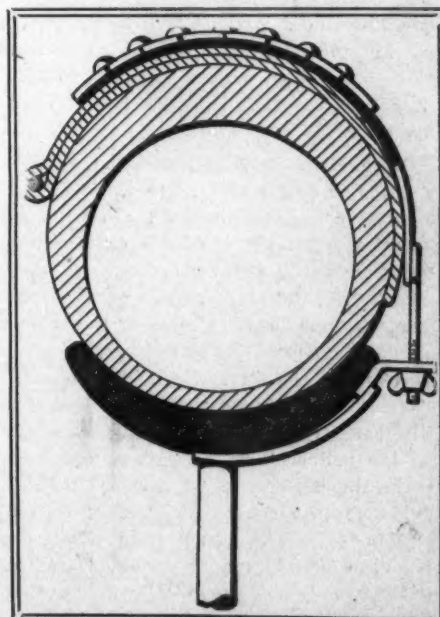
Transmission Gear—No. 870,665, dated November 12; to A. F. Colgren, Chicago, Ill.—On the drivingshaft are two worms. Carried transversely to this shaft are two other shafts, one a driven shaft with its

ends projecting through the case, the other a countershaft. On each of these crossshafts is a worm wheel for meshing with the worm on the mainshaft. The two shafts also have corresponding gears which are constantly in mesh and have clutches whereby they can be locked to their respective shafts for giving different speed variations.

Detachable Tire Tread—No. 870,656, dated November 12; to C. B. Woodworth, Newton, Mass.—The tread portion of the cover is a reinforced chrome leather band thickly studded with metal buttons. At each side of this is a series of deep serrations extending to the wheel rim. These serrations have loops through which is slipped a wavy steel ring for attaching the tread and holding it in place. Using a wavy ring gives an expansable attachment so that in case the tread was not tight on an under-inflated tire these waves or crimps in the wire will permit of much greater tire inflation without working any injury to the tread.



OLIVER'S SPEED INDICATOR



PARKER'S TREAD



C. P. MORSE, OF BILLINGS, MONT., WHO USES A MAXWELL ON HUNTING TRIPS

Italian Competitions—It has been practically decided to hold a contest for small cars similar to the French coupe des voitures on June 26 next during the Turin show.

Next Year's Targa Florio—There is much talk of the Targa Florio race being run at Bologna next year instead of in Sicily. If this should prove the case the circuit would be from Bologna to Modena, a distance of 60 kilometers, with Scala 4 kilometers from Bologna, as the starting point. The Bologna Motoring Club is prepared to put up \$25,000 for the expenses of the race.

Voiturette Contest Billed—Under the auspices of the Automobile Club of Marseilles a competition for small cars will be held in May next, as in previous years. The classes, however, have been modified somewhat; that for two-cylinder cars has been eliminated, while the category for single-cylinder vehicles will be maintained as heretofore. The total distance which the competitors will be required to travel is 150 miles—that is, eight times round a course of 30 kilometers.

Cars Help in Elections—The value of the motor car to the police was well demonstrated in Buffalo at the recent city election. In order to keep well in touch with his patrolmen, Superintendent of Police Regan, Buffalo, who was provided with a motor car for the occasion, was able to make frequent visits to the various booths throughout the city. By using the car he covered his big field thoroughly and expeditiously. On account of the various visits of the police chief the best of order was maintained. The motor car was much in evidence in recently facilitating the collection of election news in Rochester, N. Y. One newspaper provided its men with two fast cars, which made quick time to the various booths, where the latest information was secured. The ma-

chines aided well in the plan to touch the pulse of the voters in all parts of the city. As soon as the news was received it was hurriedly telephoned into the daily newspaper office.

Own a Car on Shares—There are five young women in Douglas, Ariz., who have purchased a Reo touring car on shares and an accompanying photograph shows them after returning from one of the co-partnership trips.

Popular With Hunters—Hunters generally recognize the utility of the motor car and many of them use this method of transportation. C. P. Morse, of Billings, Mont., owns a 1905 Maxwell in which he makes many trips after antelope.

Club Life in Boston—The Bay State A. A. in Boston has started off on a new lease of life, having rearranged some of its rooms so now it has a billiard and pool table in one of the large rooms. This winter it is proposed to arrange a series of affairs that will bring more members to the club and thereby help the association.

Hostility and Retaliation—Many districts throughout Europe still show the most virulent hostility toward motor cars, and appeals to the inhabitants' sense of justice and equity have been in vain. In Switzerland, notably, the utmost enmity has been displayed, outrages on motorists resembling brigandage being of frequent occurrence. Switzerland, a country depending for its prosperity on the inducements it can offer to tourists, can little afford this sort of thing, as it is now beginning to realize. Motorists from the United States, England, Germany and France are giving it the cold shoulder, and the effect of this boycott is shown by the following figures: From September 1 to 16, 1906, number of visitors, 33,525; from September 1 to 16, 1907, number of visitors, 13,706. That is to say that, during a fortnight of the high season of the land of the moun-

tains, there has been a falling-off in the number of visitors of 19,819. The man who possesses a motor car is generally the man with money to spend and therefore the man to be conciliated.

Turin Royal Show—King Victor Emmanuel, who is an ardent motorist, has not only accepted the honorary presidency of the next Turin show, but is offering a silver cup, which, according to a decision just arrived at by the exhibition committee, will be awarded for the best sporting turnout during the show.

Show for Providence—There is to be a motor car show in Providence, R. I., next February that will be, it is said, better than any one that has ever been held in Rhode Island. The show is to be held in the big armory of the Rhode Island militia and the proceeds are to be divided between the motorists and the militiamen.

Medal for the Reo—R. M. Owen & Co. have been advised by James L. Farmer, secretary of the jury of awards of the Jamestown exposition, that a gold medal was awarded Reo No. 33 for the 500-mile non-stop motor dash which it made from New York to Jamestown immediately after finishing the 1907 Glidden tour with a perfect score. Mr. Farmer further states that a replica in bronze of the medal will accompany the award diploma.

Imports of Rubber—The growing dependence of the United States upon the tropics for material for use in its factories is illustrated by some figures just compiled from official sources. Among the tropical products imported for manufacturing is india rubber, for which the demand has been of late unusually large by reason, in part, of its use in the motor car industry. The value of the imports of india rubber in the 9 months ending with September last was, in round terms, \$40,000,000, against \$36,500,000 in the same months of last year, the quantity being in the 9 months of the present year 53,750,000 pounds, against 47,250,000 in the same months of 1906.

Special Motor Routes in Europe—Roads reserved exclusively for the use of motor cars are very likely to become an accomplished fact in Germany. These would be reserved for contests from time to time, and, of course, be open to ordinary motor traffic. Five projects for such a circuit of roads are under consideration. They are: Between Frankfurt and Berlin, on the plateau of Treves, Eifel, with Coblenz as the starting point in races; Eifel, with Aix-la-Chapelle as the starting point. The Taunus, where the Bennett cup and the kaiserpreis races took place. In Italy such a departure is more advanced than in Germany. A road is to be constructed immediately which will connect the Simplon with Milan, while other routes for motor cars between Pisa, Rome and Naples, and between Pisa and Florence, are so near realization that only governmental approval is needed to carry out the work.

This is not all. It is announced in Berlin that the negus of Abyssinia has just authorized the German colonial society to construct a motoring route in Abyssinia, where the self-propelled vehicle is gaining an astonishing footing.

Utility Motor Tests—The Motor Club of the Sarthe of France has decided to organize for commercial cars a competition of a novel character. The proposal includes payment to passengers and merchants using motor-buses and lorries to travel over eight or ten routes in the Mans. The service will last 8 days during the latter part of June next.

Wisconsin Club News—Dr. Louis Fuldner was reelected president of the Milwaukee Automobile Club at the meeting of directors. Emil Schandeln was chosen first vice-president, J. C. Baird second vice president and James T. Drought was reelected secretary and treasurer. The club has arranged for a series of dinners during the winter, the first to be a beefsteak banquet to be given November 23. The Beloit Automobile Club has been formally incorporated under the laws of the state of Wisconsin. There is no capital stock. The incorporators include F. M. Strong, W. A. Gross and L. F. Bennett.

Milwaukee's First Car—Milwaukee's first motor car, unique in that it never broke the speed limit law, is now the object of admiration in a lowly cow stable in the town of Greenfield, Milwaukee county. The machine was first seen on the streets 15 years ago. It was made by Gottfried Schloemer and Frank Toepfer. The highest speed it attained was 6½ miles an hour. The wheels have solid rubber tires, and the engine is suspended under a black coverless wagon box. The steering apparatus is of the rudder type. Steps may be taken to preserve this original motor car and place it in a historical museum, either in Milwaukee or at Madison, the state capital.

Discomfiture of the Horse—At last the motor car has squared accounts with the horse. The squaring of the account came one afternoon last week, when three big Studebaker electric trucks were paraded down New York's chief thoroughfare from Forty-eighth street to the battery, bearing each as its burden of triumph two big truck horses, and hauling in the rear the old-fashioned drays which the motor trucks supplanted. They left in perfect file and maintained the order until the crowds of lower Broadway surged in to get a better look at the public discomfiture of the massive horses. With Big Charley in the lead, they were loaded on the trucks, and after much whinnying and enough kicking to dislocate one of the side pieces in the second truck, they started away down Broadway. All along the route there was a running fire of comment from pedestrians occasioned by the odd sight. At the end of the route three big electric trucks, each with a capacity of 3½ tons, were delivered to the H. B. Claffin Co.



YOUNG WOMEN OF DOUGLAS, ARIZ., WHO OWN A REG ON SHARES

They were manufactured by the Studebaker company and they make a total of six trucks of the same type now in use by Claffin. Their speed is up to 7 miles per hour and their weight is 8,400 pounds.

Old Pope Racer Remodeled—The 90-horsepower Pope racer, which contested in the last Bennett cup race, is again being overhauled by its owner, A. W. Griffin, of Toledo. This time when it comes forth from the shop it will appear as a twelve-passenger touring car. From its garb as a racer it was remodeled into a runabout.

Road Race Committee Named—T. F. Moore, secretary of the committee in charge of the stock car road race to be held in the spring, announces the following executive board and rules committee, which has just been appointed by Robert Lee Morrell, the general chairman: Colonel George Pope, Hartford, Conn.; Henry Ford, Detroit, Mich.; E. R. Hollander, New York city; H. A. Lozier, Plattsburg, N. Y.; A. Massenat, New York city; C. A. Singer, New York city; James Joyce, Providence, R. I.; Paul Lacroix, New York city; Hayden Eames, Cleveland, O.; F. P. Brand, Williamsport, Pa.; Walter Allen, New York city; F. B. Stearns, Cleveland, O.

Something Like a Manifesto—Throughout Germany the authorities have now posted placards of which the following is a copy: "Several motor accidents of recent date have proved that it is not always the chauffeurs who are to blame, but that they are attributable to the negligence of drivers of horse-propelled vehicles. It is not of rare occurrence to see these latter sleeping in their vehicles, failing to keep to the proper side of the road, refusing to pull aside to allow approaching motor cars to pass, and leaving their conveyances on the road without surveillance. In view of the great danger which results from this negligence, not only for motor

cars but also for pedestrians and cyclists, the local police are urged to enforce their regulations with a firm hand and to proceed without hesitation against all offenders, whoever they may be."

DeLuxe Stolen—Sunday night, November 17, the rear doors of the De Luxe Chicago agency at 1413 Michigan avenue were forced and a De Luxe stolen. The machine is a standard model with a blue body, yellow running gear and fitted with a pantasote extension top with blue cloth lining. The serial number is 102, which is stamped upon the brass plate located in the footboard through which the steering post passes. The car had been used 2 days as a demonstrator.

Dragon for Ormond—It is now definitely settled that one of the racers built for the Dragon Automobile Co. will be put into commission and tested out preliminary to a racing campaign next year in beach, road and track racing. The campaign will begin with the Ormond beach meeting, at which the Flying Dragon will be seen in attempts on all the heavy-weight records. The car is rated at 200 horsepower, and is built along lines designed by Charles L. Kenen, who was specially retained to construct the three racing cars.

Model Road Finished—The model road built by the government near Clinton, Wis., as an experiment, is finished. W. G. Evans, government road expert and machinist, has loaded his outfit and shipped it to Huntington, W. Va., where he will construct another sample road. He has completed roadways at Oswego, Kan., and Auburn, Neb. The Clinton model road is the only one in the northwest. It is about 1 mile long, and cost nearly \$5,000. Janesville and Beloit, two large southern Wisconsin cities, are taking an active interest in this work. This plan apparently appeals to the farmers who have profited by the teachings of the government officials.



THE READERS' CLEARING HOUSE



USE OF SPECIAL STEELS

New York—Editor Motor Age—The Readers' Clearing House of November 14 printed some remarks by Hayden Eames in relation to special steel that are of more than passing interest, since Mr. Eames, like the Austrian grenadier, is alone holding the pass. Purchasers of motor cars will in the long run decide themselves if they want 50 carbon steel in the cars they purchase, with the chances in favor of a decision to the effect that such steel will be debarred from good wheelbarrow practice. It is a notorious fact that carbon in steel renders the same statically strong and dynamically unreliable; this fact was taken into account years ago by even farm wagon builders. All the ordinary vehicles of the road were long constructed of iron—not of carbon steel—and it is to their everlasting credit that they possess a good endurance factor. These wagons run at a slow rate of speed and are not subject to the severe shock loads to which the motor car falls heir, with the result that the iron of the farm wagon is not likely to prove strong enough for the motor car. Even so, iron is used in some of the good cars, and such of them as use iron—not steel—are well and favorably known.

Fabricators of steel are inclined to recommend high carbon in the same, because the heat in the furnace is lower if the carbon is high and the linings of the furnace last longer as a result. The same fabricators of steel furnish products very low in carbon when they are called upon for a fine special product to withstand shock loads. If, then, carbon in steel is a detriment under dynamic load conditions and iron—almost devoid of carbon—is not strong enough, the natural sequence is alloy steel, since there are alloying elements that increase the static strength without destroying the dynamic ability.

The present trouble with alloy steel is that due to a high carbon content and an excess of the metalloids. These troubles it is true are confined to the alloy steel factories of the mills that are after an inordinate profit. When alloy steel is low in carbon, sulphur and phosphorous, if they are the product of acid furnaces, the results are thoroughly good in every way and the steel is easy to fashion. If, on the other hand, such genera of steel are an imitation of quality and are the product of the basic process or if the process is acid on a basic bottom, no good results are likely to follow. And again if crucible steel from Bessemer bars is used the steel will be no better than the basic Bessemer steel, as indicated by the source of the charge in the pot.

Certainly cars are lighter today than

they were a short while back and the reason is that special steel is used in the cars that are a conspicuous success and the inferior cars are a copy in point of design of parts but not in quality of material. As the question of advertising goes, advertising does not always settle a matter of this sort, but it is a fact nevertheless that those who advertise quality are justified, while the advertisers who claim what their product does not hold at least signify their belief in the virtue of what they advertise.

The designers who have no computed data and at this late day are experimenting with sizes of parts must have been asleep, or the obtuseness of their minds is past all reckoning. Fortunately the pudding has been consumed and even purchasers of cars now know that special—that is to say good—steel must be used to produce good cars.

Mr. Eames concludes by saying, "I do most emphatically disapprove of blindly substituting something which is comparatively unknown for something which has been tried by practice." As regards this view of the subject one must say that when a product fails to do the work it is necessary to use some other product, even if it is new and more or less of an experiment. Carbon steel has been tried at great length and the failures chargeable to it are well known to every builder of cars and to most every user thereof.

Alloy steel is not unknown and is no experiment; nor is it used in cars of an inferior quality. Carbon steel is well known, it has been tried at great length and its one value lies in its ability to sustain static loads. Cars require dynamic steel, hence carbon steel is not suited for the purpose. In conclusion the writer begs to point out that some wag substituted the telephone for what was a well-known but slow method of transmitting intelligence. The substitution was justified, but it cannot be claimed that even quick methods of transmitting intelligence have availed much in some directions.—Thomas J. Fay.

STRAIGHTAWAY RECORDS

Burlington, Wis.—Editor Motor Age—Will you kindly answer the following questions through the Readers' Clearing House? Who has the world's record on circular track races on 1, 2 and 3-mile tracks for gasoline cars, steam cars and motor cycles? Also, who holds the world's records on straightaways? What is the average time per mile? Is there anybody building an eight-cylinder car, and is it successful? If not building, who experimented, besides the Maxwell?—P. O. B. 593.

Motor Age does not tabulate track records. The gasoline straightaway mile

record is 30¾ seconds, made by Chevrolet in a 200-horsepower Darracq at Ormond in 1906; the steam mark is 28¾ seconds, by Marriott in a Stanley steamer. Demogeot in a Darracq did 2 miles in 58¾ seconds and Marriott in a Stanley did 59¾ seconds. An eight-cylinder motor similar to that used in the French racing launch Antoinette is built for motor cars and otherwise by the Hewitt Motor Co., 6 East Thirty-first street, New York City. The cylinders of this motor are inclined about 90 degrees to each other in two sets of four, and the pistons work two and two on four crankpins. There have been other eight-cylinder motors built, but only for racing purposes, so far as known.

STICKS BY THE FOUR

New York—Editor Motor Age—It is interesting to trace the development of the modern internal combustion motor from the original single cylinder to the multiple cylinder of the present day. When the motor car was in its infancy the single-cylinder motor was popular; first, because of its simplicity, and, second, because it was easy to manufacture. This type, while highly satisfactory from the standpoint of reliability, was objectionable on account of excessive vibration. With the advent of the two-cylinder motor a large amount of this vibration was eliminated, but not entirely. Both the three-cylinder and four-cylinder motors were built, the three-cylinder surviving but a very short time, not so much on account of imperfect balance as on account of difficulty of manufacture. The four-cylinder motor has become standard because it produces a smooth-running engine with a minimum of complications. The six-cylinder advocate points out that if the two-cylinder is better than the one and the four better than the two, that it is only logical the six should be better than the four, but this does not necessarily follow. Reasoning this way, it might be pointed out that the eight or twelve cylinder is better than the six, but in the manufacturing of every article a certain standard is attained which practice and experience have shown to be most satisfactory. It seems to me that the logical way to look at the matter is that the power required necessarily governs the number of cylinders. It has been proven by experience and designers are generally agreed that a 5 by 5 or 5½ by 6-inch cylinder is about the maximum cylinder capacity that it is advisable to make. Therefore, for cars up to 40 or even 50 horsepower the four-cylinder motor fulfills every requirement, while for an engine rated at say 70 horsepower it is perhaps advisable, though not necessary, to increase the number of cylinders in order

that each separate unit may not be too large. I am fully convinced that the standard touring car of the present time, as well as the future, will be fitted with a four-cylinder motor of approximately 40 horsepower. This type of motor car will appeal to a large conservative class of buyers with the wish to use their cars as distinct utilities and who are not affected by fad or fancy.—C. F. Redden, Studebaker Brothers Co.

A MAXWELL TROUBLE

Eureka, Cal.—Editor Motor Age—I have a two-cylinder Maxwell car and in the port engine have no trouble, but in other engine have considerable. It is always bucking. When I let the port engine run alone it runs nicely and very evenly, but as soon as I run other engine alone it will lag and slow till it almost stops; in fact, it is erratic and does not have that quick, steady, even explosion the other has. It can't be the carbureter, as it would affect both engines, would it not? I have adjusted the coil and cleaned the carbon out of the cylinders, also cleaned spark plug and contact points. It does not need grinding, as it only run several hundred miles. It also has lost power. The power is there, but I can't find it. Surely I did not lose it on the road. Can you find the trouble and return it to me, as it will relieve me wonderfully?—J. H. Young.

Maxwell engines use very high compression, and certain forms of spark plugs having projecting wires at their inner ends cannot be used in them, owing to the ends of the wires overheating and causing pre-ignition. It is possible you have a spark plug of this sort, and that the substitution of another style of plug will end the trouble. If the trouble is not in the plug, it may be in an imperfect connection between one of the primary spark coil terminals and the primary. Such a connection may make contact when the engine is standing still, but be loosened by vibration when the engine runs. You might connect a wire to the primary coil binding post of the cylinder that gives trouble and ground the other end of the wire, thereby closing the circuit for that coil. By disconnecting the secondary cable from the plug and fastening it so that the spark will jump to the engine, meanwhile running the engine to the other cylinder, you will be able to determine whether the vibration of the engine affects the regularity of the sparks in the balky cylinder. You might also make sure that the valves are correctly timed—that the cams have not slipped—and that they close without sticking.

TREGO SIDES WITH FOURS

Chicago—Editor Motor Age—In discussing the six-cylinder proposition it seems to me that some of the most vital factors of an internal combustion engine have been overlooked: 1—The effect of the cylinder walls—which are being cooled by the water in the waterjacket—on the products of combustion of the gasoline and air

after the ignition. Let us take the total surface of the combined cylinders, which surface is exposed to the gases of the charge: A 5½ by 5-inch motor of four cylinders has a total exposed inner surface of 345.8 square inches. A six-cylinder motor, to contain the same volume of gas and hence to have the same power, will be 4½ by 5 inches in size, which will give it a total area of cylinder surface of 424 square inches, being an excess of 78.2 square inches. This covers the space swept by the pistons only, and if we are to include the additional wall space of the water-jacketed combustion chambers we will have to add about 24 square inches more to the difference, making a total difference in wall space of the two motors of approximately 102 square inches. In other words, the six-cylinder exposes 22.7 per cent more wall space than does the four-cylinder motor. According to Hiscox, the absorption of heat or power through the waterjacket is at least 25 per cent outside of the radiation of heat from the walls of the motor, so that if we assume the total loss to be about 30 per cent, then the motor having 22.7 per cent more exposed surface to water and radiation will have a total loss through this cause of 36.75 per cent, and will therefore have a lower efficiency than the other. I think this has been proven many times through the six requiring more gasoline than the four. The six's low motor speed will accentuate this cooling effect or loss of heat in the burned gases so that the lower efficiency will have this as an additional cause along with the greater cooling area. 2—Mr. Winton seems to disregard the flywheel entirely and its beneficial effects. In a properly designed motor the flywheel plays an important part, its duties being to absorb the individual thrusts of the several cylinders and also to carry the engine over the center. On account of the small weight of the average motor flywheel, its effects are not felt on low motor speed as much as on an average to high speed, so that the six-cylinder gains here in smoothness of running when moving slowly on direct drive, but loses out on gas consumption, as shown in case 1. After the car has attained a speed of 15 to 20 miles per hour and above, we lose the disadvantages of the four and gain practically all of the advantages of the six, without its attending disadvantages. I judge that at a speed exceeding 20 miles per hour it would be impossible to distinguish between the running of the two motors when riding in the car. I will admit that the six can run with a lighter flywheel than the four; but it makes up in weight with the other two cylinders and thus has a greater total weight than the four. If it were not for the flywheel the six would be operative and the four would not; but we have the flywheel and its momentum accomplishes for the four practically what the additional two cylinders do for the six, of course at speeds over 15 miles per hour, for under that the average

weight of flywheel does not give the four the smooth running of the six. 3—Mr. Winton has gone into the discussion of more ignition and valves, but he must admit that although a man can grind a thousand valves if he can grind one, the four extra valves make the motor 50 per cent more liable to valve troubles than the four, that there is 50 per cent more wiring both from the magneto and battery, that there is 50 per cent more spark-plug trouble and that there is 50 per cent more oiling to do in the bearings and pistons. It is not the regrinding of valves nor the renewal of spark plugs and wiring which annoy the motorist, but rather the trouble caused by these various things and the difficulty of locating this trouble. It may be noticed that the motorist with the one-lunger keeps his car running with much less expense and annoyance from stops than does the owner of a four or six-cylinder car. Of course, the service is not the same any more than the service of a compound locomotive and a hand car, but the hand car gets there and does not require the attentive care, which is the only thing which keeps the big locomotive going at all. 4—I believe that on the average the tendency is toward smaller cars and less horsepower, and that the average motorist cannot stand the expense of the heavier cars. I do not believe this will settle the argument, but these suggestions may help to a better understanding of the proposition.—F. H. Trego, Joseph F. Gunther Co.

SIX-CYLINDER TIMING

Janesville, Wis.—Editor Motor Age—In the issue of October 31, page 35, at the end of an article headed "Order of Explosions in Sixes," you say: "The rapid sequence of ignition in a six makes the possible drag in the make-and-break mechanism the entire factor." Will you explain this a little more fully?—R. C. Lewis.

The statement embraces the majority viewpoint of designers consulted and that is: A six-cylinder engine, that it may give its full value of lapping working strokes, ought to have all cylinders firing at the same position of the stroke and that with the many mechanical parts involved in make-and-break ignition the chances for losses in equation of timing, due to variance in wear between cylinder sets is "the factor."

ETHER IN GASOLINE

Bennington, Kan.—Editor Motor Age—I would like to know if putting ether in gasoline will increase the speed and power for a motor car and what percentage makes the best mixture. Also advise me what is the best 10-mile record on a half-mile track.—A Subscriber.

Ether used either pure or in equal parts with gasoline will increase considerably the power of the engine. It is understood to be used considerably for that purpose in racing. It is dangerous stuff to handle, and the amateur should leave it alone. Motor Age does not tabulate track records.

The Rebirth of the Commercial Car



NOVEL MOTOR STAGE FOR SOUTHERN CALIFORNIA USE

A MOTOR stage route is soon to be established between San Diego and Ensenada in lower California. This will be the first line of any kind to connect southern California with that section of Mexico lying along the Pacific ocean. Wealthy ranch owners in and around Ensenada are back of the proposition and a company has already been formed. Glen Lull, of the Auto Vehicle Co., of Los Angeles, and M. McKee, also of Los Angeles, with R. M. Bowser, of San Diego, recently went over the proposed stage line route to estimate the cost of building a road for the line. To operate a motor stage line bridges must be built, and the entire road must be put into shape. Now it is little better than a cow path in spite of the travel between the border towns and San Diego. From Tia Juana, the Mexican town directly on the boundary line between the United States and Mexico, the motorists found the roads excellent for the first 25 miles. Then the way leads up a cañon down which runs the Tia Juana river. The road crosses and recrosses this stream many times, and it is here that the erection of bridges will be necessary before the operation of a stage line is practicable. J. C. McQuigg has obtained a franchise from the Mexican government to run the stage cars, and has arranged with them for the erection of bridges provided the government will repair the roads along the route. The Mexican officials are kindly disposed toward the project. At least eight bridges will have to be erected. The cost, however, will not be excessive as the distances to be spanned are comparatively small. In winter the river is a torrent, and it is proposed to build frame bridges of sufficient strength to withstand the ravages of flood waters.

Once out of the Tia Juana cañon the road lies along comparatively level ground and the expense of putting it into shape

would be small. The party made good speed into Ensenada where the prominent citizens are taking great interest in the plans for the stage road that will place them on the map. It is expected that the stage line will do much toward opening up the country around Ensenada which is now practically unknown. The land is said to be well adapted to fruit raising, and much of it is excellent wheat land needing only water to make it as much a garden spot as parts of southern California. McQuigg owns several thousand acres near Ensenada and other big land owners there are backing the plans for the motor stage line. The first cars used will be ordinary touring cars. These may be purchased in Los Angeles. Later a heavier car will be used. Designs for such a car have already been considered.

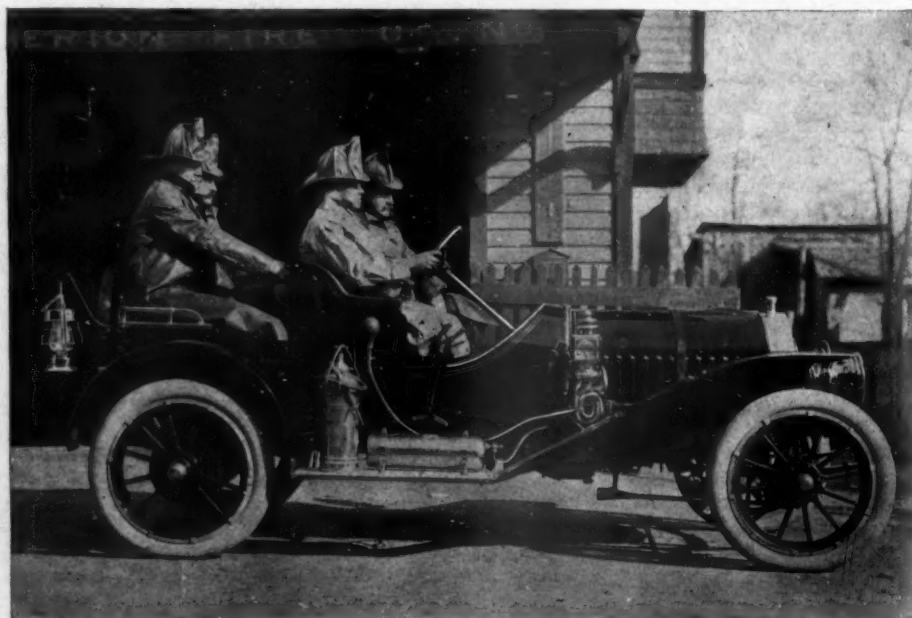
From all parts of the country comes the

Activity the Slogan

same story of horse stage lines being replaced by motor bus lines. One of the latest examples of this is connected with one of the oldest stage lines in the country, that which connects the beautiful hill town of Paxton, Mass., 8 or more miles above Worcester to the west. George Harrington, owner of Kennilworth hotel in Paxton, has established a motor bus service connecting with the electric of the Worcester consolidated system in the suburb of Tatnuck. The bus service has proved very popular and if Harrington gets the contract to transport Uncle Sam's mail the days of stage coach, which makes two trips daily from Worcester, are numbered.

USED BY FIRE DEPARTMENT

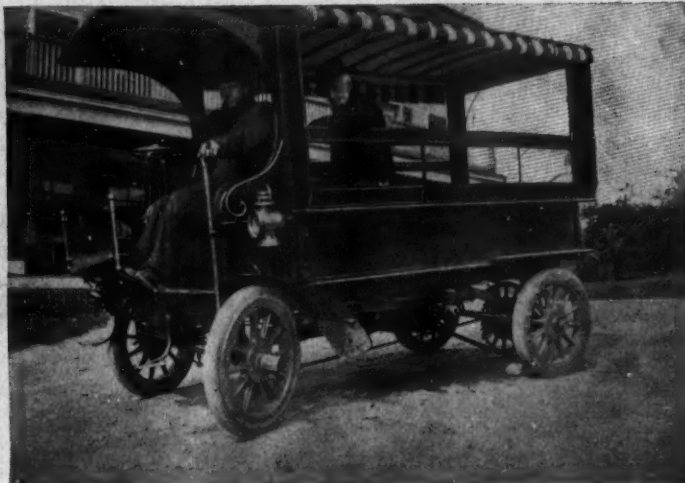
Two examples of the adaptability of the conventional motor car chassis for fire department work are the Thomas and the Autocar, the former by the Webb Motor Fire Apparatus Co., of Joplin, Mo., and the second by the Autocar Co. By a simple arrangement A. C. Webb, of Joplin, Mo., converted a Thomas Flyer chassis into a motor fire engine, repeated tests of which have shown good results. Webb built his fire engine by placing a rotary pump on two crossframe members in the rear of the transmission connecting the pump gear with the transmission by a shaft running from one of the auxiliary shaft gears and controlled by a lever placed at the side of the driver's seat. This gear connecting with the pump may be thrown into mesh



AUTOCAR ROADSTER TRANSFORMED INTO A FIRE DEPARTMENT CAR



PAXON'S ORIGINAL HORSE STAGE



PAXON'S LATEST MOTOR STAGE OUTFIT

THE OLD AND THE NEW

and the rotary pump started when the scene of the fire is reached. Incidentally, the shifting of the pump gear into commission automatically cuts off the radiator from the motor, water being supplied for the cylinders from a separate feed from the rotary pump. When this gear is again shifted out of mesh, the radiator is automatically connected up with the motor and resumes its duties. It was thought necessary by Webb to provide this auxiliary water supply, owing to the fact that a motor car fire engine might be forced to stand for hours with the motor going at high speed and the pump in operation. The first experiments were made at Buffalo, Webb spending two weeks at the plant of the E. R. Thomas Motor Co. Officials of the Buffalo fire department witnessed these tests and were enthusiastic over the results. With a rotary pump smaller than the one now in use on the car, a stream of water was thrown completely over one of the three-story concrete and steel buildings.

The adaptability of the Autocar roadster to commercial purposes is demon-

strated by its use in the Seattle fire department. A 1908 roadster specially designed and equipped for the use of the chief of the fire department of Seattle was turned out from the Autocar factory at Ardmore. The car is arranged to seat the chief, a driver and three firemen and to carry in addition a chemical extinguisher and other fire-fighting apparatus. It is capable of making 60 miles an hour and on account of the great efficiency of the Autocar control, is especially adapted for the sudden turns and emergency situations in the city streets.

INDIANA'S GREAT PROGRESS

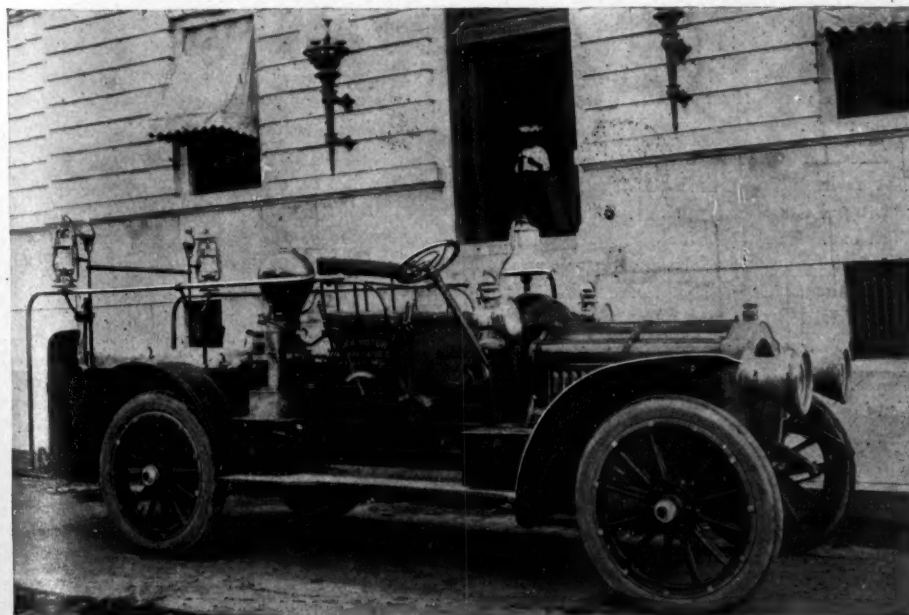
The several sight-seeing companies in Indianapolis, Ind., are closing a very successful season. In fact they are closing their first season, for sight-seeing cars only made their appearance in Indianapolis last May. There are not many points of historical interest nor are there any real skyscrapers or remarkable buildings in the city. The Soldiers' and Sailors' monument, the state house and an eight-story hotel are about the principal points of

interest. Still, the sight-seeing companies are closing with good profit. Probably the smooth and well-kept streets are responsible as much as anything else for the interest in sight-seeing. There are miles of asphalt streets and the city has a number of first-class boulevards for pleasure vehicles only, finished this year. The Indianapolis Sight-Seeing Co. operates two twenty-two passenger gasoline cars, making hourly or bi-hourly trips from Illinois and Washington streets. A ride of an hour and sometimes 2 hours is made for 50 cents. The large number of conventions in the city resulted in the company setting aside one of the big cars for use of delegates and the plan proved successful. Quite recently the Automobile Livery Co. was formed by F. B. Caldwell, who purchased four Premier and one Stoddard-Dayton touring cars. These are distributed in prominent thoroughfares and passengers are taken a 15-mile ride for 50 cents, with a minimum of four passengers at a time. During the summer the Capital Auto Co. purchased a twelve-passenger Reo bus and made a specialty of hiring it out to parties. As a result the bus has been in service most of the time, engagements being made several days or a week ahead.

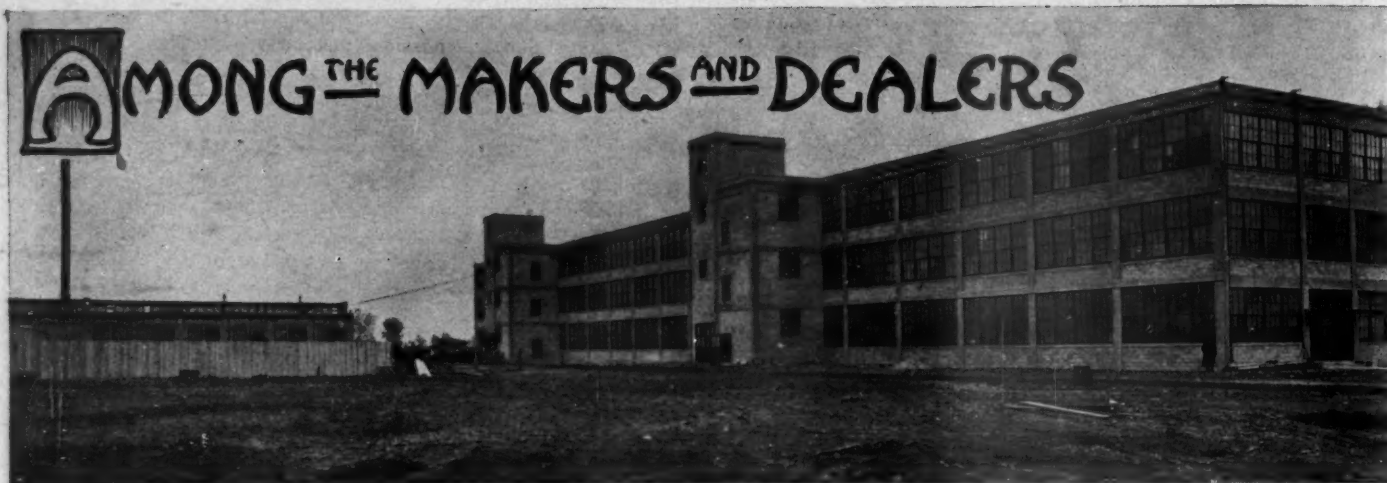
SOME COMMERCIALITIES

The Indianapolis Motor Car Co., retailer of the Rapid cars, has adopted a special maintenance contract such as is used in Europe. For a fee equal to an ordinary garage storage charge the company agrees to keep commercial vehicles running every day in the year. Each night after the close of the day's business the drivers are required to run their trucks or wagons to the garage, where they are cleaned, inspected and the necessary repairs made. Further, the drivers are instructed not to tamper with the machinery in any way, and if trouble arises to telephone the company, which will arrange at once for transferring the load to another truck.

Director of Public Safety Clay, of Philadelphia, has asked for bids for a car for his own use.



THOMAS FLYER CONVERTED INTO A FIRE ENGINE



NEW REINFORCED CONCRETE FACTORY OF E. R. THOMAS DETROIT CO.

Takes the Crawford—The Rice garage, which was recently opened at Madison and North avenues, Baltimore, has the agency for the Crawford.

Olds in Orioletown—The Baltimore agency for the Oldsmobile car has just been taken by French and A. L. McCormick, of Washington, who have opened up a garage at Mount Royal avenue and Dolphin street, opposite Mount Royal station, in the Oriole city.

Pushing Motor Buggies—The new building of the Dosson Carriage Co., now being erected at the corner of Eleventh and Monroe streets, Toledo, will soon be ready for the owners. It is expected that the work will be completed and the company in possession by January 1. In addition to a complete line of buggies this will be the home of the Holsman in Toledo. Mr. Dosson having had the agency of that motor buggy for some time.

Dolson in the Courts—A voluntary petition in bankruptcy was filed in the United States court at Grand Rapids by the Dolson Automobile Co. Three Chicago creditors, with claims aggregating \$1,000, are responsible for the petition being filed. The book value of the assets aggregate more than \$250,000, with unsecured indebtedness amounting to about \$140,000. Among the assets is a factory site, covered by a mortgage.

American Cars in Berlin Salon—Motor manufacturers in Germany, America, Belgium, England, Italy and even Switzerland are making preparations to be represented at the next motor exhibition in Berlin. Renault, Bayard, de Dion, Berliet, Lorraine-Dietrich and Mathis cars will be among the French group; Italian makes will be seen in the Fiats, while Züst and S. P. A. cars will also be shown; Minerva, Piedboouf, Metallurgique and Pipe vehicles will come from Belgium; Martini, Saufir, Arbenz, Orlon and Humbert from Switzerland, and some Daimlers from England. The United States will be represented by Pope-Toledo and Ford cars. The salon will be divided into two sections—one for large touring cars to extend from

December 5 to 12, and the other for lorries, motor cabs, delivery vans and motor boats, to be held in the same place from December 16 to 19.

Garage Almost Ready—The new garage of the Lichtie Automobile Co., of Toledo, is fast nearing completion, and will be ready for occupancy in a few weeks. The location, at the corner of Madison avenue and Eleventh street, is one of the best in the city, and the building will be most conveniently arranged, having been erected with a view to the business to be conducted. It is thought that the move will be made into the new quarters of the company about December 1.

Shift in Location—Announcement is made of a shift in location on Broadway, New York, the Rainier Motor Car Co., which was the first to erect a special building for the motor car business on Broadway and Fiftieth street, having leased the big corner building at Fifty-sixth street and Broadway, now occupied by the Hol-Tan Co. In this building, which the Rainier people will take on January 1, the Rainier company will be able to conduct under one roof the business which it now has distributed in three buildings. This building is five stories and basement and contains more than 43,000 square feet of floor room.

Hol-Tan Co.'s Plans—The Hol-Tan Co. has relinquished its Fiat agency and has arranged for the manufacture of an American car. The designer of the car is Louis P. Mooers, and it will be manufactured by the Moon Motor Car Co., of St. Louis. The bodies will be made by Locke, Quinby and Demarest, and for the present the Hol-Tan car will be made in two models, differing as to chassis length, wheels and wheel base only. The shorter car, known as the Hol-Tan Standard, will be 110 inches wheel base and have a 4½-inch square four cylinder motor. The Hol-Tan rating is 25 horsepower, but the A. L. A. M. formula gives 32 horsepower. There are four speeds forward and a reverse. The transmission is sliding gear Mooers selective type with beveled gear to floating divided rear axle.

The Hol-Tan Special will have 121 inches wheel base, giving room enough in the tonneau of the touring car to accommodate five passengers instead of three.

Opens Show Rooms—The Hamilton Auto Co., of Baltimore, has opened up show rooms in the Academy of Music building, Howard street, near Franklin street. The concern is the agent for the Stoddard-Dayton car and started business in Baltimore last winter, when it established a garage at 2312 Madison avenue.

Morrison Out Again—A. E. Morrison, who was smashed up in a motor race at Lowell, Mass., July 4, is once more able to be back in the harness. He went to the New York shows and while there formed a concern known as the Morrison-Price Co., which is to handle the Rainier and the Wayne cars in Boston. The Wayne formerly was held by J. M. Linscott, who has the Reo and National. Mr. Morrison will have his headquarters at the old place on Massachusetts avenue, where he handled the Oldsmobile and Stearns.

Thomas' Detroit Plant—The E. R. Thomas Detroit Co. is operating in its large, new, reinforced concrete factory out Jefferson avenue, in Detroit. The machinery has been turning for 4 weeks past and every department is now in full operation. Notwithstanding the delay incidental to moving from its old factory, production of the 1908 cars was carried on continuously, and deliveries have been going out to the agents ever since the first of October. The contract was let May 15 and the plant was opened the latter part of September, fully equipped. The main building is of reinforced concrete, three stories high, and the elevators, stairways and toilet rooms are in separate wings. This gives a straight, unbroken space on each floor 400 feet long. At the rear is the power plant, blacksmith shop, motor-testing shop and frame-assembling department. At the left of the power plant will be the car-testing buildings, and no car will be permitted to run under its own power in the main plant. The E. R. Thomas Detroit Co. is closely associated

with the E. R. Thomas Motor Co., of Buffalo, although it is an entirely separate organization. During the past year it turned out in all 506 cars.

Hub Changes—E. E. Cole has become affiliated with the Premier agency in Boston, and a new addition to the Lozier concern in the same city is Rene Beauchem.

MacEvoy With Archer—V. H. MacEvoy, formerly sales manager of the C. G. V. Import Co., has joined the sales forces of Archer & Co., American concessionaires for the Hotchkiss car and agents for New York city and surrounding territory for the Pennsylvania.

Morse With Thomas—The E. R. Thomas Motor Co. has announced the appointment of E. C. Morse as commercial manager. Mr. Morse will be in full charge of all matters pertaining to the sale of the Thomas product and of the advertising. Mr. Morse for 8 years held a responsible position in the sales department of the National Cash Register Co., of Dayton, O.

Henshaw Changes—Charles S. Henshaw, who had the Haynes agency in Boston, and before that was the Thomas representative in the hub, sprung a surprise on the dealers in that city by getting the Oldsmobile agency. The A. E. Morrison company had dissolved and so the agency was on the market. Arthur Adams, who had been hustling hard while Mr. Morrison was laid up, figured on getting it, but it was finally turned over to Mr. Henshaw, who has retained Mr. Adams to assist him.

De Dietrich Cars for 1908—The Societe Lorraine-Dietrich has sent out details of its cars and their cost for 1908. The company will place on the market two new types for town use, one a 14-20-horsepower with four-cylinder engine and cardan drive, and the other a 15-20 horsepower, six-cylinder engine, also with cardan drive, both types having a direct drive on top speed. A feature of the new de Dietrich cars will be the fact that all the models will have a direct drive on both the third and fourth speeds. As to prices, they are slightly higher for the smaller models, and lower for the larger type of machine. The

Societe Lorraine-Dietrich has large workshops at Luneville and Argenteuil, in France, with large branch works at Milan and Birmingham.

Fuller Energetic—Alvan T. Fuller, Boston agent for the Packard and Cadillac, continues to branch out. He has just secured the lease of a place on Stanhope street to be used as a garage in addition to his large repair and stock room at the motor mart.

Lozier Territory Divided—With the increase in Lozier agencies the territory has been separated into two divisions—eastern and western, the former in charge of W. S. M. Mead, and the latter under the direction of F. C. Chandler. The retail sales department of the metropolitan district will be in charge of C. A. Emise. Mr. Chandler, for a number of years manager of the Hamburg branch of the Lozier company, also will have charge of the foreign sales department.

Opens Tire Branch—The Empire Automobile Tire Co., of Trenton, N. J., is opening a branch house in New York city, on Seventy-third street, on the point formed by the juncture of Broadway and Amsterdam avenue. This is the building formerly occupied by the Aerocar Co. The branch is under the management of Marcus Allen, who was for several years manager of the Auto Equipment Co., of Detroit. A complete stock has already been installed in the new store of Empire clincher tires and tire accessories.

Coast Salesroom—The Los Angeles salesrooms and offices of the Ollier & Worthington Co. have been opened at 1030 South Main street. The company will represent eastern and middle western manufacturers of sundries, and will do a wholesale business. The interior decorations are artistic, and the entire furnishings rich. Instead of counters and the old-style showcases, the store has a table on a large green rug in the center of the room. On a plate rail along the wall has been placed names of the firms represented by the company, done in gold lettering on glass. The showcases are six in number. They are

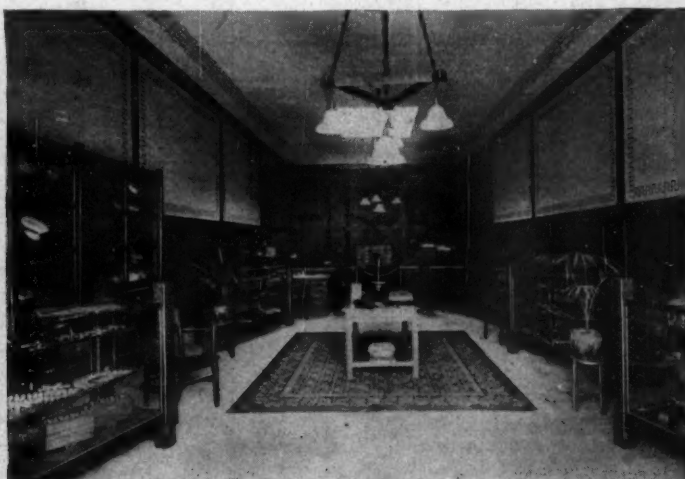
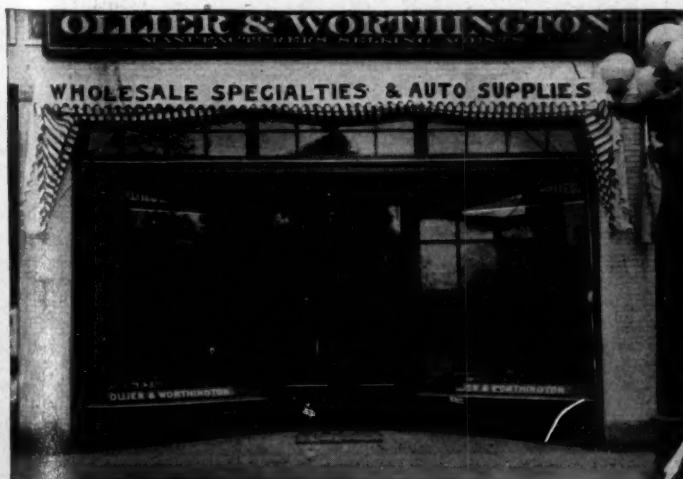
small, finished in mission style. The offices are enclosed by a brass rail, and the mission idea is carried out completely in the office furniture.

Nussbaum Goes With Jones—E. P. Nussbaum, who for many years was general manager of the National Electric Supply Co., of Washington, D. C., and who for the past year has been selling Harris oils, has resigned to accept a position as special sales representative of the Jones Speedometer Co., Broadway and Seventy-sixth street, New York.

Buy Deere-Clark Plant—Interests represented by C. H. Pope have purchased the property of the Deere-Clark Motor Car Co. for \$37,500, or 40 per cent of the aggregate of claims held against it. It is said to be the intention of Mr. Pope, A. E. Montgomery and others represented by them to resume the manufacture of Deere motor cars along the same general lines as by the defunct concern.

New Studebaker Branch—A Philadelphia branch house has been opened by the Studebaker Brothers Co., of New York. A. J. King has been appointed branch manager and Frank Yerger assistant branch manager. Mr. King formerly was connected with the Keystone Automobile Co., the Panhard agent in Philadelphia. Mr. Yerger was associated with the Titman-Leeds Co., the former agent of the Studebaker car. The location of the branch will be central.

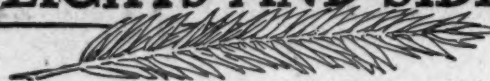
Germany's Trade—The imperial statistical bureau of Germany has prepared figures dealing with Germany's motor car trade for the first 6 months of 1907. During this period 1,268 cars, valued at \$2,813,690, were imported. In the same period Germany exported 607 cars, valued at \$1,751,205, of which the greatest number were taken by France, Austria, England and Russia. These figures refer to pleasure cars. Of commercial cars Germany imported twenty-two from France and Switzerland and exported 185, of a value of \$474,664, to Great Britain and European Russia. Altogether the imports into Germany amounted to \$3,116,029, an excess over exports of about \$24,000.



EXTERIOR AND INTERIOR OF THE STORE OF OLLIER & WORTHINGTON AT LOS ANGELES, CAL.



LEGAL LIGHTS AND SIDE LIGHTS



DECIDES GLEN ECHO CASE

Washington motorists won a signal victory in the circuit court of Rockville, Md., Monday when Judge Henderson in his decision in the case of John Lutz against the state of Maryland and the mayor and council of Glen Echo, involving jurisdiction over the conduit road and a determination of the question of whether the conduit road is a public highway within the meaning of the Maryland statute regulating the speed of motor cars, held that while the state of Maryland retains general jurisdiction over the road it is not a public highway. The decisions of Mayor Garrett and Magistrate Robertson were reversed and Lutz acquitted. By this decision all arrests made by Marshal Collins for a violation of the speed law on the conduit road were illegal, as were the fines imposed by Garrett, amounting to nearly \$1,000. The cases were on appeal from the decision of Mayor Garrett, of Glen Echo, and Justice Robertson, of Rockville, in fining Mr. Lutz for alleged violations of the motor car laws of Glen Echo and Montgomery county. The arguments attracted many motorists from Washington who are vitally interested in the outcome of the case. State's Attorney Peter declared that the United States government constructed the road and dedicated it to the use of the general public; that it is a highway within the statute and is consequently subject to the laws regulating the running of motor cars. In regard to the question of jurisdiction, Mr. Peter held that the act of the Maryland legislature ceding to the United States government the right to acquire the strip of land for the conduit did not carry with it exclusive jurisdiction, but that the state reserved its jurisdiction in criminal and civil cases. He also argued that the legislature had the right to confer police powers upon the mayor of Glen Echo, and that that official had acted within his authority in fining Mr. Lutz. Counsel for Lutz took the position that the conduit road is not a public highway within the meaning of the statute, and that the road was constructed for the convenience of government officials in looking after the waterway. He further maintained that exclusive jurisdiction attached to the United States.

KNOTTY PROBLEM FOR COURT

If a man is driving his car along a main thoroughfare at a moderate clip and his chauffeur observes a man approaching on a bicycle and that individual hardly knows which way to turn and the driver almost brings his car to a stop and the cyclist crashes into the car and is cut up in consequence, who is to blame when it is noted that the car is on the right side of the road? That is the question now before

Judge Ralph Wheeler, of Hartford, Conn. T. L. Cheney, of South Manchester, one of the wealthiest men in the state, is made defendant in a suit for damages instituted by Edward Heim, who in his prime dispensed thirst quenchers over the polished surface of a Temple street bar. Heim, it appears, was undecided which way to turn and Mr. Cheney's driver noting the former's indecision, throttled his engine almost to a standstill and the latter thereby sustained injuries from which he never will recover, he says. Testimony in support of the plaintiff's contention that he was permanently injured was introduced but as to Mr. Cheney being negligent sufficient proof was lacking. In fact, the car which was to have been driven up a side street to a local tire shop, was continued on a straight course to permit the wheelman to pass. The attending physician when called into court enlightened that body on the anatomy of man to such a degree that the presiding judge felt disposed to make a hasty examination of his own person to insure of his being all right. It appeared from the testimony of the defense that the plaintiff was riding his wheel so fast that he had no alternative other than to crash into the machine.

HELP THE ROAD FUND

The Connecticut state controller has received from the town court of Norwalk an additional remittance of \$20 for fines imposed for violation of the motor law. Judging by returns thus far made, Norwalk and Madison are the only towns in which prosecutions have resulted since the new law went into effect. Including the amount received, the state treasury has been replenished to the extent of \$282.50 from the town of Norwalk while little Madison on the shore of Long Island sound has contributed \$10. The best feature of all this is that this money goes for good roads, to be expended at the discretion of the state highway commissioner and as that individual is a firm friend of the good roads movement there is no doubt as to its being wisely expended. It must not be assumed of course that these two towns, though the only ones in which prosecutions have occurred, are likewise the only communities in which violations have actually taken place. The contention is that the officials of the smaller towns are more zealous for the enforcement of the provisions of the law than would be the case in a larger community where the minions of the law have matters of more importance to command their energies. However, if only a small percentage of all the motorists in Connecticut were to be fined for a single violation there would be a lot of remote Connecticut roads that would be fit for a Vanderbilt cup race next season.

AUSTRIAN OPPOSITION TO TAXES

A proposition to tax heavily all motor cars in Austria-Hungary was recently referred to a commission of inquiry. At a meeting recently held the president invited the opinion of his fellow councillors on the subject, and Prince Solms declared himself an uncompromising adversary of any impost. Commandant Wolf followed and said: "Our army has need of motor cars, the more so because foreign armies are much ahead of Austria-Hungary in respect to the introduction of self-propelled vehicles. The war office, whose maxim is to watch over the defense of the country and to fortify it if possible, cannot approve of any measure calculated to hinder the progress of the motor industry and to militate against the purchase of cars. While on this subject I would like to say a word for those motorists who every year voluntarily place themselves and their cars at the disposition of the war office, and take upon themselves pecuniary and personal sacrifices to render services to the army. It would be unjust to ask these to support further burdens. I conceive that, as much from the economic as from the patriotic standpoint, it would be well if this project were abandoned." The meeting closed after a stormy discussion which ended in no decision being made. It is certain, however, that the project will not go through in its present form.

WARNS ITS MEMBERS

The Automobile Club of Philadelphia has issued the following warning to its members: "Your attention is called to the recent announcement of the director of public safety, that he intends to enforce the city ordinance requiring drivers of motor cars in Philadelphia to obtain a license from his department. Such license may be obtained at the bureau of boiler inspection, city hall, at a cost of \$2 for the first year and \$1 for renewals in each succeeding year. Drivers from other cities are allowed 48 hours' grace while in Philadelphia. The committee on routes and sign posts has arranged for the erection of numerous road signs at different points and for signs bearing the words "Blow Your Horn" at crossroads which the local authorities deem dangerous. This has been done that drivers may have warning and avoid a fine for non-compliance with the state law, which provides that the gong or other alarm should be sounded when approaching a street or road crossing. In order that there may be no misunderstanding, your attention is also called to the fact that these signs are posted only at important crossings, as they cannot be conveniently posted at every crossing; but the authorities may insist that drivers shall blow their horn at crossings."



MOTOR CAR SHOP KINKS



EMPTYING A GASOLINE DRUM

In the accompanying sketch, showing the syphoning of the gasoline from a drum a on the back of a motor truck to an underground storage tank b, it might be somewhat of a problem to decide upon the simplest way of starting the flow of liquid. One obvious method, of course, is to pour a quantity of the fluid into the hose c, while another would be to suck the air out of the hose with the mouth. The first of these, however, is more or less trouble, since it involves the provision of some sort of a utensil, as well as tilting the drum to pour out a portion of its contents, while the second method is open to the objection that some of the gasoline may be inadvertently drawn into the mouth. A ready solution of the difficulty, as discovered by some unknown genius in hydraulic engineering, is slowly to run all but one end of the hose into the tank and then to withdraw it quickly. The hose will thus become filled with gasoline, and if it is drawn out fast enough the friction of the flowing liquid against its walls will insure the retention of a sufficient quantity to start the syphoning.

WHEN WHEELS SLIP

When the wheels of a car slip because of lack of traction, as in the case of a muddy surface on a grade, or deep mire under any circumstances, then it is that the average motorist looks about for a horse, thus unwittingly conceding that steel-shod hoofs possess a certain superiority over rubber-shod wheels. His more resourceful fellow, however, is not thus easily dismayed, and realizes that at least one hope of extrication still remains. This is to use the hub of one of the driving wheels in the manner of a hoisting drum, wrapping it with a turn or two of a rope, one end of which is attached to a tree or any other convenient solid object in front of the car. As shown in the illustration, the slipping of the wheels, which occasioned the trouble, now becomes the salvation of the foundered machine, as by letting in the clutch with the low gear en-

gaged, and with someone to maintain a tension on the rear end of the rope, an enormous pull is secured, which is certain to uproot something. Naturally, the rope must be applied to the wheel that spins most freely, the differential action usually causing one to hold while the other slips. And the number of turns about the hub will depend upon its form, the pull required, and the size of the rope. Usually one turn will suffice, and, in any case the number of turns necessary to hold will be surprisingly few. With some hubs, it will prove difficult to keep the rope on, unless it is exactly in line with the plane of wheel rotation. This suggests that it might not be a bad plan for manufacturers to conform the hubs to the general outline of a very small hoisting drum, which would afford an appearance neither ungraceful nor radically different from present forms. When no tree or other attachment for the rope is available, a stout stake may be driven into the ground.

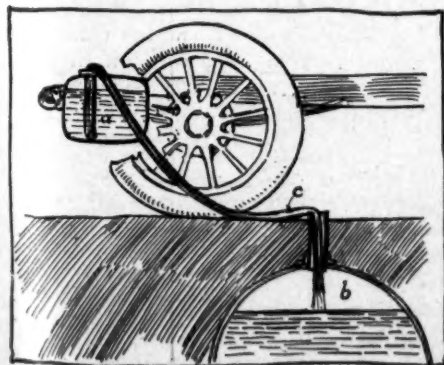
ADJUSTING GEARS

Sometimes the readjustment of a pair of bevel gears that have been unmeshed becomes a serious problem to the user of a car who does his own overhauling. Especially is this likely to be the case with bevel driving gears, not too accessibly mounted in axle housings. In some cars these gears are even so placed that their point of closest meshing cannot be seen, so all adjustment has to be done in the dark, so to speak. Under such conditions, the only recourse is to feel the adjustment—a plan more thoroughly practical than it might appear upon first consideration. Of course, whether plain, roller or ball bearings are used, there is sure to be some means of setting the two gears in their exact relation with each other, and by turning the adjusting member a trifle at a time the gears can be placed in all positions, from that in which they bind so tightly that they will not run to one in which they are so loose that their teeth rattle rather than mesh together. Under these conditions the desired adjustment can be

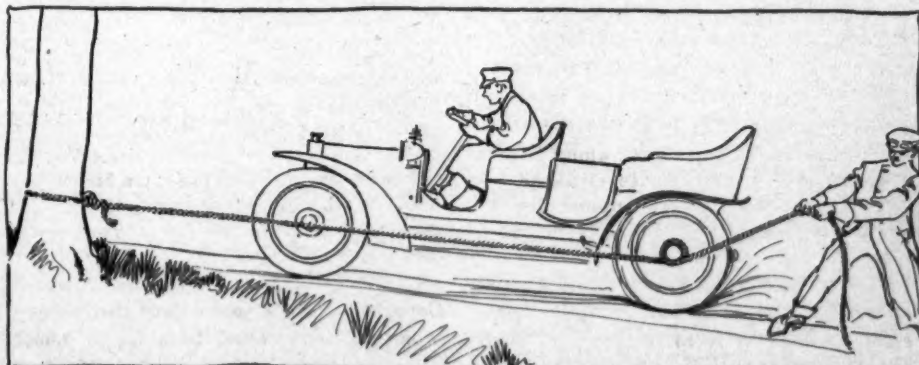
secured most easily by feeling the gears until they mesh just right; that is to say, start with the gears separated enough so there is perceptible lost motion between them, and then, by repeated trials, make them approach each other together by small increments until the lost motion just disappears. With most constructions this will prove a step-by-step process rather than one affording infinitely small gradations, because the means of locking the adjusting element will consist of closely-spaced holes or notches, from one to another, which must be the space involved in each change of adjustment, stopping in mid positions not being permissible. Towards the end of the work a point will be reached at which one position still leaves a barely-discernible looseness which the next position tighter eliminates. By then backing the adjusting element one notch, the adjustment is complete, it, of course, being better to have the gears just the least trifle loose rather than to take any chance of their binding.

CLEANING ALUMINUM

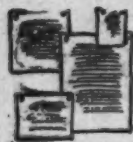
Cast aluminum, finished neither by painting nor polishing, is coming to be so widely used for footboards, running boards, toeboards and other visible parts of the modern car that the problem of maintaining its beautiful satiny finish in new condition is one that more and more confronts the particular motorist. Despite its widely-advertised immunity from corrosion, there are conditions under which its appearance will deteriorate very rapidly. Salt water, for example, will quickly corrode it, while the slopping of storage-battery solution has been known to eat aluminum running boards clear through. Even grease, combined with dust, makes dirt that has been found difficult to remove, especially from roughened surfaces. All of these conditions can be remedied, however, by applying some good sand soap with a very stiff scrubbing brush. A mixture of emery with washing powder proves even more effective, in that it reduces the work required.



EMPTYING A GASOLINE DRUM



SIMPLE REMEDY FOR SLIPPING WHEELS



BRIEF BUSINESS ANNOUNCEMENTS



Boston, Mass.—The A. E. Morrison Co. has been appointed Boston agent for the Wayne.

Sharon, Pa.—Application will be made for a charter for the South Sharon Automobile Co.

Newark, N. J.—The Auto Tire Repair Co. has removed from 396 Halsey street to 267 Halsey street.

Cleveland, O.—William N. Booth has gone with the Oldsmobile company. He was formerly connected with the Holmes-Booth Co.

Allentown, Pa.—Application will shortly be made for a charter for the Lehigh Valley Motor Car Co. The concern will operate a garage, and will deal in motor cars and supplies.

Brooklyn, N. Y.—M. J. Wolff, of the Williamsburg Auto and Storage Co., of 159-161 Clymer street, has taken the agency for the Matheson. Mr. Wolff already has the agency for the Autocar.

New York—O. E. Boles has returned from abroad, and in the future will be associated with the local sales department of the Lozier Motor Car Co. Mr. Boles was for years the London manager of the Lozier company, and more recently acted in the same capacity for the American Bicycle Co.

Milwaukee, Wis.—In the future the Logan car will be represented here by the Commercial Auto Co. The concern has a temporary garage at 1103 Grand avenue, and is under the management of O. A. Eskuche and Mitchell Mackie. The line will include the light and heavy delivery wagons and the Logan runabout.

Newark, N. J.—The Star Motor Car Co. has opened a garage at 222 Halsey street, where it will represent the Kisselkar. Lester B. Harris is the president of the company, and Leon B. Harris treasurer, while P. F. Gillette, formerly the secretary of the Plainfield Motor Co., is to hold a similar position with the new company.

Brooklyn, N. Y.—Plans have been filed for the erection of a garage one and a half stories in height on a plot 50 by 100 feet, to cost \$5,000. The building is to be on Clarendon road, east of Flatbush avenue. A. J. Sweeney and A. Nail, of 704 East Twenty-second street, are interested in the new concern, and intend to do a general motor business.

Newark, N. J.—The Standard Motor Car Co., which was recently incorporated, has been consolidated with the Motor Car Co., of New Jersey. Inglis M. Uppercu, who was president of the Standard company, has been elected treasurer and secretary of the new concern, in place of Peter H. Seary, who has resigned. The new concern will handle the old line of

the Motor Car Co. of New Jersey, which were the Packard, Cadillac, Northern and Autocar.

New York—The Cadillac company has opened its new salesrooms at Broadway and Fifty-first street.

Portland, Me.—The James Bailey Co., dealer in harness and motor supplies, has been burned out with a loss of more than \$100,000.

New York—E. B. Gallaher has given up the agency for the Kisselkar, and in the future will give all his attention to the Napier and the York-Pullman.

Brooklyn, N. Y.—The Electric Vehicle Co. has appointed a new salesman for the entire Brooklyn territory, and has selected John K. Frink for the position. Mr. Frink formerly was connected with the Franklin company.

Allentown, Pa.—A new concern is in process of organization here, to be known as the Lawfer Automobile Co. J. Harry Lawfer and his son, Levan Lawfer, are the members of the new firm, which will act as agent for the Ford.

New York—In the future the garage business of the Palmer & Singer Mfg. Co. will be conducted by a new company to be known as the Knickerbocker Garage Co. The new concern is really a subsidiary company, and has the same officers as the Palmer & Singer Co. The Matheson people expects to move into its



Rochester, N. Y.—Fred A. Mabbett Co.; capital stock, \$40,000; to manufacture motor cars, etc. Incorporators, F. A. Mabbett, J. W. Pressey and H. M. Bettys, all of Rochester.

New York—Thomas Battery Co.; capital stock, \$5,000; to manufacture motor cars, etc. Incorporators, Dr. J. P. Thomas and T. S. Wetherbee.

New York—International Automobile School and Engineering Co. of Manhattan; capital stock, \$50,000; to deal in motor cars and supplies, as well as operating a garage. Incorporators, J. F. Baldwin and F. Gregory.

Boston, Mass.—Whitten-Gilmour Co.; capital stock, \$24,000; to deal in motor cars, etc. Incorporators, C. E. Whitten and E. A. Gilmour.

Camden, N. J.—Direct Motor Drive Mfg. Co.; capital stock, \$100,000; to engage in the manufacture of motor cars. Incorporators, Lewis Ryan and W. O. Foss.

St. Louis, Mo.—Logan Motor Dispatch Co.; capital stock, \$25,000. Incorporators, A. L. Perkins and T. S. Lewis.

Buffalo, N. Y.—Williams Carburetor Co.; capital stock, \$10,000; to manufacture carburetors, engines and machinery. Incorporators, J. G. Williams and H. A. Davis.

Chicago, Ill.—Forty-third Street Automobile Co.; capital stock, \$40,000; to store and repair motor cars. Incorporators, A. B. McCord and G. G. King.

new garage in about 2 weeks, when the garage business will be taken over by the Knickerbocker company.

Cleveland, O.—Hall Brothers have been appointed local agent for the Commercial Motor Truck Co., of Plymouth, O.

New York—Cimoitti Brothers, who have the local agency for the Mora, have opened a new salesroom at 1743 Broadway.

Cleveland, O.—L. E. Manely, formerly connected with the Holmes-Booth Co., has joined the forces of the Ford Motor Co.

Brooklyn, N. Y.—Charles E. Miller has opened a Brooklyn branch at 1932 Bedford avenue, corner of St. Mark's place.

Beaumont, Tex.—The Keith Electric Co. has filed an amendment to its charter, changing its name to the Keith Electric Auto Co.

New York—I. H. Manning, formerly connected with the firm of Wyckoff, Church & Partridge, has joined the selling force of the White company.

New York—Schedules in bankruptcy of the Manufacturers' Motor Car Co., 50-56 West Forty-third street, show liabilities of \$11,692 and assets of \$8,232.

New York—Plans have been filed for remodeling the three-story garage at 52-54 West Sixty-seventh street, owned by William H. Hubbell, the improvements being for the Imperial Garage Co., as lessee.

New York—Hugh F. Weston has been appointed receiver of the Auto Operating Co., of 305 West Seventy-ninth street. The company has motor liveries at Lakewood and Manhattan Beach during the season.

Milwaukee, Wis.—The Sollday Motor Car Co. has let the contracts for the erection of its new garage on Eighth street, and the work will be commenced at once. The building is to be two stories in height, but will be so constructed that additional stories may be added at any time. The company has the agencies for the Wayne, Welch and the Mason.

Milwaukee, Wis.—The Rambler Garage Co. is to add a supply department to its business. It has purchased the entire stock of the Milwaukee Motor Supply Co., of 115 Wisconsin street, and has removed the entire stock to its garage on Broadway. W. H. Lake, the former manager of the Milwaukee Supply company, will act as manager of the new department.

Salem, O.—J. J. Murray and Sam Siegrist have closed a deal with the Guenther Planing Mill Co. whereby they have leased the building now occupied by the mill at Fifth and Walnut streets. After the necessary alterations are completed the building will be used as a factory and garage. The concern is to be known as the Siegrist-Murray Automobile Works.